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# The Journal of the *International College of Surgeons*

COLLEGE INTERNATIONAL DE CHIRURGIENS

**FIFTH INTERNATIONAL ASSEMBLY**

**Lima, Peru (Date to Be Announced)**

**Prof. Dr. Francisco Graña, General Chairman**

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## ASSEMBLY POSTPONED

Because of continued curtailment of travel facilities, the Fifth International Assembly of the International College of Surgeons, which was scheduled to be held in Lima, Peru, September 10, 11 and 12, has been postponed. The State Department graciously granted travel priorities for the officers of the College, but it could not make them available for all the delegates from the United States. As soon as it is possible to arrange for transportation of all those who have planned to attend the Assembly, another date will be chosen and announced.

Seal of Republic of Peru

## ASAMBLEA POSPUESTA

En vista de las restricciones existentes en los medios de transporte, la Quinta Asamblea Internacional del Colegio Internacional de Cirujanos, que debía llevarse a cabo los días 10, 11 y 12 de Septiembre en la ciudad de Lima, Perú, ha sido pospuesta. El Departamento de Estado de los Estados Unidos amablemente ofreció prioridades para los oficiales del Colegio, pero no le fué posible ofrecerlas a todos los delegados del Capítulo de los Estados Unidos. Tan pronto que sea posible obtener las facilidades necesarias para transportar a todos aquellos que desean asistir, otra fecha será señalada y anunciada con la debida anticipación.

# *Original Articles*

## Rehabilitation

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PHILADELPHIA, PA.

FEW problems have taken greater hold upon popular imagination than rehabilitation. It required the sickness and disabilities incident to war to develop in this nation an awareness of the magnitude and importance of this subject. In the past there have been many whose conception of rehabilitation has been too limited. If a comprehensive rehabilitation program is to be successfully carried out, the subject must be thought of in its broadest sense. As pointed out by Hostetler,[1] it should include all forms of physical, social, psychologic, recreational and occupational therapy as well as reeducation in vocational fields. To these activities must be added sound medical and surgical treatment. In the light of such a concept there is merit in the recent suggestion that rehabilitation should be called "reconstructive medicine."[2]

Those who are accustomed to think of rehabilitation only in relation to diseases and injuries resulting from war have overlooked the important relation which this subject bears to industry, which for many years has presented a problem in rehabilitation of staggering proportions. It has been stated that industrial injuries for 1940 were listed at 1,890,000, with 18,000 fatalities, nearly 90,000 persons permanently impaired and 1,782,000 temporarily disabled. Loss of time, excluding that due to deaths and permanent disabilities, was estimated at 41,912,000 days, the equivalent of the full time work of 140,000 persons. If deaths and permanent injuries are included, the total soars to 233,840,000 days, amounting to the full time work of 780,000 workers.[3] These appalling figures have been augmented as a result of industrial activity in the last few years, which has made it necessary to employ a large number of comparatively ill trained workers, older persons and women. It is obvious, therefore, that rehabilitation offers a peacetime problem comparable to that brought about by war. When to this toll of disability present under ordinary conditions of life there is added the as yet undetermined number of persons whose physical and mental impairment is the outcome of war, the problem of rehabilitation attains proportions that are well nigh fantastic. It is not difficult to envision the medical, social, economic and even political potentialities of such a situation.

Although the ever present task in rehabilitation that confronts industry is fully recognized, concern at this time centers about the obligation to insure adequate reconstruction of returning service men and women. In planning any form of assistance to such a group of persons, it is desirable to subdivide them. Such a division, however, offers

Read at the Ninth Annual Assembly of the United States Chapter of the International College of Surgeons, Philadelphia, Pa., October 1944.

difficulty, since they have but one common denominator, their service in the organized armed forces. This experience has removed them from their normal environment, separated them from their former associates and modified their personalities and reactions by exposure to new forms of discipline, regimentation and group training. Otherwise they are heterogeneous; they come from widely scattered geographic areas; they represent many social and economic groups; their educational backgrounds have not been uniform; in civilian life they have been occupied in all manner of vocations and professions. There has not even been any similarity in their individual experience in the military service. Some have never left the homeland, while others have been transplanted for months or years to strange, far distant countries. Some have been actively engaged in the destructive activities of the battlefronts; others have pursued essentially peaceful occupations in rear areas. All of these factors require careful consideration in working out an effective program of reconstruction, but present innumerable perplexities if used as a basis for grouping the individuals. For the purpose of this discussion, which deals with the broad aspects of rehabilitation, it would seem best to follow the plan adopted by Meakins,[4] which divides returning service men and women into the following groups:

1. Those who have serious physical disability, such as loss of a limb or of sight or hearing or impairment of the use of one or more limbs.

2. Those who have a severe systematic illness, such as tuberculosis, arthritis, malaria or filariasis.

3. The psychotic persons and those suffering from psychoneuroses.

4. Those who are to all intents and purposes mentally and physically well. Discussions of rehabilitation for the most part pay little or no attention to these, who comprise the majority of the persons who are separated from the military services.

It would be inappropriate on this occasion to attempt to discuss in detail the various steps in the rehabilitation of these different groups. A consideration of the basic principles involved in the management of the first three groups mentioned is desirable. The first step in rehabilitation is competent surgical and medical care. Thanks to the admirable organization and efficiency of the medical departments of the United States Army and Navy, it is well recognized that from the forward echelons at the battlefronts all the way back to the general hospitals in this country, the injured and sick of the armed forces are given the best medical and surgical care. Responsibility does not end with the provision of an adequate treatment for the sick and wounded. It must be accompanied with or followed by a well considered program of physiologic reconditioning. The purpose of such a reconditioning program is to return the maximum number of casualties to active duty in the minimum amount of time and, in the case of those who cannot be retained in the armed forces, to insure for them a useful place in civilian life. Manpower shortages and the necessity for conserving battle-seasoned troops for further duty have brought about the development of a highly efficient program of convalescent reconditioning in both the Army and the Navy. The details of the organization and operation of this program have been discussed elsewhere by those best qualified to speak from first hand experience and with authority.[5, 6]

For some time, interest in planned

treatment for convalescents has been growing among the medical profession. It has been stimulated by the lessons that have been learned as a result of this war. This experience should prove of great future help in civilian practice, especially in industrial practice. At this time it is particularly important to do everything possible to return injured employees to productive employment in the shortest possible time. To accomplish this, it has been shown that convalescent reconditioning plays an important role.

The reconditioning of those who are disabled, regardless of the extent or origin of their disability, presupposes the best medical and surgical care that is available. This may involve any of the special fields. In addition to anything else that may be required, experience has shown that in any successful rehabilitation program physical medicine, occupational therapy and psychotherapy are indispensable adjuncts. These special types of therapy should not be reserved until convalescence is well established. More and more they are being employed as soon as the acute and critical stage of disability is past. The sooner they are used, the better will physical fitness be preserved and morale improved. Consideration of occupational therapy or psychotherapy must be left to those better qualified to deal with these forms of treatment. In passing, it may be pointed out that although the formal use of psychotherapy is properly the function of those who are especially trained in that field, its general application should not be so restricted. Consciously or unconsciously it is employed routinely by every successful physician. It should be part of the armamentarium of the physical and occupational therapeutist, the results of whose work can often be greatly enhanced by the intelligent use of psychotherapy.

The experiences of the last war, which have been supplemented by those of the present conflict, have emphasized the importance of physical medicine in any effective program of rehabilitation. The wide scope of the term physical medicine is well illustrated by the definition of this subject recently proposed by Krusen[7]: "Physical medicine includes the employment of the physical and other effective properties of light, heat, cold, water, electricity, massage, manipulation, exercise, and mechanical devices for physical and occupational therapy in the diagnosis or treatment of disease. Physical medicine is applied biophysics."

The dependence which physical reconstruction places on physical medicine is apparent when it is realized that in civilian practice 5 to 10 per cent of all patients are in need of some form of physical treatment. In 1939, 8.3 per cent of all patients who registered at the Mayo Clinic were treated at some time in the Section of Physical Medicine. By 1942 this figure had increased to 9.5 per cent. Today it is even higher. The number of patients who require physical forms of treatment is greater in military than in civilian practice. A year ago in the military establishments of the United States the figure varied between 10 and 20 per cent. In the early part of this year it was stated that at the Walter Reed Hospital approximately 20 per cent of all patients admitted were referred to the Department of Physical Medicine.[8] An appreciation of this situation led Colonel Frank Billings, Chief of the Rehabilitation Service after the last war, to state: "Every hospital needs a physical therapy department as much as it needs an operating room."[9]

It is undeniable that until recently the members of the medical profession of this country as a whole have exhibited an apathy amounting almost to indifference to the value and the possibilities of physical medicine. As a result of this attitude, they recently found themselves woefully unprepared to meet the urgent demands of the armed forces for medical personnel especially trained in this field of therapy. Those who have long appreciated the possibilities of physical medicine are gratified to note the somewhat tardy increase of interest in this subject. Although the needs of our armed forces and the rapidly expanding rehabilitation program can be held largely responsible for this change in attitude, credit is due also to the constant efforts that have been exerted by certain organizations interested in physical medicine. Notable among these are the Council on Physical Medicine of the American Medical Association, the Foundation for Infantile Paralysis and, most recently, the Baruch Committee on Physical Medicine. With the aid and encouragement of these and similar groups, a number of medical schools are now engaged in developing programs to further instruction and research in physical medicine. It is anticipated that these activities not only will place this branch of therapeutics on a sound scientific basis but will develop a sufficient number of physicians and technicians adequately trained in this field to meet the problems of rehabilitation with which this nation will be faced for many years to come.

Time does not permit a detailed consideration of the many conditions encountered in military practice that are amenable to or at least helped by recourse to the various technics employed in physical medicine. There is general agreement that physical forms of treatment are valuable adjuncts in the management of many traumatic conditions, notably fractures, dislocations, traumatic arthritis and stiff joints. They are indispensable for many orthopedic conditions, for example, postural strains, backache and flat feet. Physical therapy is of great value in the rehabilitation of patients who have suffered trauma to the soft tissues, such as amputations, scars, contusions, sprains and other forms of lacerations to muscles and tendons, paralyses resulting from peripheral nerve injuries, tendon transplants, tenosynovitis and bursitis.

The value of physical therapy for many medical conditions is not so clearly appreciated, but it occupies a foremost position in the rehabilitation of persons with arthritis and in the management of that large group of ill defined neuromuscular disorders variously referred to as myositis or fibrositis. It has a definite field of usefulness in cases of cardiac disease, particularly that of functional origin, of peripheral vascular disease, of anemia and even of pulmonary tuberculosis, blindness and deafness. The modern treatment of the psychoses and the psychoneuroses would definitely lose efficiency if deprived of the aid of physical therapy.

As stated earlier, physical medicine is now being employed in the treatment of convalescents. While the disabled are still in bed, exercises and massage may be carried out with advantage. As convalescence progresses, graduated and regulated active exercises are substituted and, when needed, appropriate corrective gymnastics. It is interesting to recall that exercise during convalescence and in the management of chronic disease was long ago advocated by S. Weir Mitchell, of Philadelphia. His teachings were largely lost sight of and neglected until interest was recently

aroused in the advantages and disadvantages of rest in bed and in the economic and industrial importance of shortening convalescence and returning the disabled and sick to their accustomed occupations in the best possible physical and mental condition. The foregoing allusions, admittedly incomplete, nevertheless convey some idea of the part that physical medicine may be expected to play in the rehabilitation program in the United States.

In most considerations of reconstruction scant attention has been paid to the fourth group designated by Meakins,[4] the service men and women who are returned to civilian life apparently entirely well. It is not generally appreciated that a change takes place in all who have experienced a tour of duty in the armed forces. It is erroneous to believe that the service man returns to civilian life the same person he was when he entered the army. Personality has been altered more or less obviously as the result of suppressing individualism to meet group needs. Furthermore, the places, the people and the work to which he or she has become adapted in premilitary days will also have changed. This readjustment of the war veteran to civilian life and industry has been well discussed by Cameron.[10]. Those responsible for the rehabilitation program will have failed in their obligation to the men and women in the armed services if they believe that persons who are still physically fit need merely to be discharged and returned to civilian life with words of praise and a separation allowance. It has been suggested that centers be established, under the control of the Army and Navy or other agencies, where a trained personnel will be available to help with sympathy and understanding in the many psychologic and social readjustments that will be necessary before some of the individuals in this group can be reestablished with self respect and contentment in the industrial life of their communities.

It has been repeatedly pointed out that the chief interest of the Army and Navy in rehabilitation is to shorten the convalescent period and to return thoroughly reconditioned individuals to active duty. When, after a period of maximum hospital care and observation, it has been definitely shown that a man or woman is unfit for further military service, he or she must be discharged from the armed services and other agencies must carry out the rehabilitation. Fortunately there exists in this country a department that for nearly twenty-five years has been concerned with the welfare of the veterans suffering from disabilities, whether acquired in service or not. This same agency is charged with the responsibility of the care and rehabilitation of the disabled and sick veterans of this war. That agency is the Veterans Administration. It is curious that both the medical and the lay public are amazingly uninformed as to the varied functions and the notable accomplishments of this vast department of the government. This ignorance is the more astonishing when one recalls the huge financial burden that the tax payers of this country have carried and will continue to carry for generations in order to maintain properly the essential activities of the Veterans Administration.

In a paper delivered before the American Neurological Society in May 1944 on the rehabilitation activities of the Veterans Administration, Dr. Martin Cooley, at that time still an active executive in the Administration, indicated the magnitude of the facilities which this organization provides for the medical care of ex-servicemen.

"The Veterans Administration stands ready today to provide out-patient treatment in over 100 field stations, located in practically every state, and such out-patient service can be brought to the home of the beneficiary who cannot travel to the nearest such field station. For hospital treatment and domiciliary care, 80,000 beds are presently available and that total will rise to 104,000 in two years, while on cessation of hostilities, it is expected that 100,000 additional beds in modern, strategically located situations will be turned over by the Army and Navy for use by the Veterans Administration. Hospitalization is furnished not only for disease and for injury attributable to former armed service but for any condition having no such relation, and for applicants of the latter class, there is no requirement as to length of service. Had they served only one day, they will be entitled under most liberal conditions to free hospitalization for any disease or injury they may develop during life."

Today throughout the length and breadth of this country, there are ninety-four hospitals under the Veterans Administration. The object of their rehabilitation program is: first, to furnish the best form of medical and surgical reconstruction; second, to supplement this by satisfactory physical and occupational therapy; third, to institute appropriate vocational training; fourth, to provide selective placement in industry.

In addition to the Veterans Administration, there has now been set up the Office of Vocational Rehabilitation of the Federal Security Agency, with its various state branches. Since the establishment of this office an additional responsibility has been placed upon the Veterans Administration to administer a vocational rehabilitation service through fifty-three field agencies.

When the Army and Navy, the Veterans Administration and other governmental facilities have accomplished their maximum in the way of reconstruction, responsibility for the rehabilitation of former service men and women has not ended. From then on it becomes the duty of communities as well as of industry to see that the task is brought to completion and that those who have sustained disabilities in the service of their country may be returned to productive employment. In this undertaking the cooperation of industry is already apparent. Large employers of labor are alive to their opportunity as well as to their responsibility. In some industries, carefully selected organizations involving the personnel and medical departments have already been formed so that employees returning from the armed forces can be assured of their former positions and be made to realize that their reemployment is in no sense an act of charity but is justified by their productivity and skill.

To meet these problems of reconstruction with intelligence and understanding will require, as Meakins put it, "the combined efforts of physicians, surgeons, psychiatrists, industrial psychologists and sociologists and the leaders of labor and industry." Just as civilians are being turned into effective soldiers with such cooperation, it should be possible to develop an equally efficient technic for converting good soldiers into useful civilians.

## SUMMARY

Rehabilitation must be considered for industrial workers as well as for members of the armed forces. Concern at this time, however, centers about the needs of returning service men and

women. According to the classification proposed by Meakens,[4] these may be divided into four groups: (1) those who have serious physical disability; (2) those who have acquired a severe systemic illness; (3) those suffering from a psychosis or a psychoneurosis, and (4) those who are to all intents and purposes physically and mentally well. It must be remembered that even the fourth group have undergone a change as a result of their wartime experience and that attention must be given to their readjustment to civilian life.

Rehabilitation requires work in various special fields of medicine and surgery. Physical medicine, occupational therapy and psychotherapy are indispensable adjuncts. The importance of physical medicine is especially stressed.

The United States Veterans Administration will play an important part in the work of reconstruction. Local communities and industrial leaders must cooperate, however, in this huge task of converting good soldiers into useful citizens.

REFERENCES

1. Hostetler: J. A. M. A. *125*:259 (May 27), 1944.
2. Report of the Baruch Committee on Physical Medicine, April 1944, page 49.
3. Report of the Baruch Committee on Physical Medicine, April 1944, page 59.
4. Meakins: Canad. M. A. J. *51*:195 (Sept.), 1944.
5. Rankin and Barton: J. A. M. A. *125*:256 (May 27), 1944.
6. Drewyer, G. E.: Arch. Phys. Med. *25*:408 (July), 1944.
7. Krusen, F. H.: J. A. M. A. *125*:1093 (Aug. 19), 1944.
8. Krusen, F. H.: Proc. Staff Meet., Mayo Clin. *18*:320 (Sept. 8); 344 (Sept. 22), 1944.
9. Billings, Frank, quoted by Cotton, F. H.: Mod. Hosp. *14*:201 (Feb.), 1920.
10. Cameron, D. E.: Canad. M. A. J. *51*:202 (Sept.), 1944.

SUMARIO

El autor dice con énfasis que la rehabilitación deberá ser tomada en consideración tanto para con los que trabajan en la industria como también para los miembros de las fuerzas armadas. Nos preócupan actualmente las urgentes condiciónes entre los hombres y mujeres que regresan del servicio.

Según la clasificación propuesta por Meakens,[4] estos pueden ser divididas en cuatro grupos: (1) los que tienen seria incapacidad física; (2) los que han adquirido una enfermedad sistémica seria; (3) los que súfren de psicosis o de psiconeurosis; (4) los que de todo punto de vista físico o mental están sános. Se lláma la attención a que los del cuarto grupo han sufrido un cambio como resultado de las experiencias de la guerra y que se debe tomárse en cuenta la necesidad de restablecerlos e integrarlos a la vida civil.

La rehabilitación require trabajo en varios rámos de la medicina y de la cirurgía.

La medicina fisica, la terapeutica de ocupación y la psicoterapeutica son indispensables adjuntos en el manejo de estos casos, y la medicina física con especial acento.

La Administración de Veteranos de los Estados Unidos indudablemente hará buen trabajo de reconstrucción. Las comunidades locales y los jefes de la industria dében cooperar en la labor de convertir buenos soldados en ciudadanos útiles.

RÉSUMÉ

Il importe de réfléchir sur les méthodes à employer pour la réhabilitation des travailleurs et des soldats, marins et autres des forces armées. Pour le moment, les besoins et les soins à donner aux hommes et aux femmes qui retournent au pays après avoir servi dans les forces expéditionnaires dominent le sujet. D'après l'auteur, ceux-ci peuvent être classifiés en quatre groupes distincts: (1) ceux qui ont de grands blessés; (2) ceux souffrant d'une grave maladie systémique; (3) ceux souffrant d'une psychose ou d'une neuropsychose; (4) ceux qui apparemment sont bien portants, physiquement et mentalement.

Ces derniers, ayant subi certaines influences durant leur service militaire, demandent de certains soins pour se reajuster à la vie civilienne.

La réhabilitation exige l'attention de spécialistes en médecine et en chirurgie. La médecine physique, la thérapie occupationnelle et la psychothérapie sont des adjuvants indispensables. Il faut insister sur la grande importance de la médecine physique.

Le United States Veterans Administration jouera un grand rôle dans l'oeuvre de la réconstruction. Les chefs d'industris et des comités locaux doivent coopérer dans la tâche de faire des citoyens utiles de ces braves soldats.

## СВОД

Автор подчеркивает необходимость принять в соображение реабилитацию не только солдат, но также и промышленных рабочих. Но в настоящее время интерес концентрируется, главным образом, на нуждах мужчин и женщин, возвращающихся с военной службы. Maekens делит их на четыре группы: (1) те, кто поражены серьезным физическим недостатком; (2) те, кто страдают сильной системной болезнью; (3) те, кто страдают от психоза или психоневроза, и (4) те, кто практически здоровы в физическом и душевном отношении. Указано, что под влиянием испытаний войны даже эта последняя группа подвергнулась некоторым переменам, и что нужно обратить внимание на приспособление ее к частной жизни.

Реабилитация требует работу в различных специальных областях медицины и хирургии. Физическая медицина, трудовая терапия и психотерапия являются необходимыми инструментами. Особенно подчеркнута важность физической медицины.

Администрация ветеранов Соединенных Штатов (The United States Veterans Administration) будет играть большую роль в работе реконструкции. Но местные общины и вожди промышленности должны тоже содействовать в этой громадной работе трансформации хороших солдат в полезные граждане.

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### ACTIVITIES OF THE INTERNATIONAL BOARD OF TRUSTEES SINCE THE FOURTH INTERNATIONAL ASSEMBLY

The following resolutions affecting the Constitution and By-Laws of the International College of Surgeons have been adopted by the International Board of Trustees and will be presented for final approval to the House of Delegates at the Fifth International Assembly, in Lima, Peru.

I. That physicians devoting their entire time to Anesthesiology, Roentgenology or Pathology, who are recognized specialists, be granted upon presentation of proper credentials and upon proper election the title of *Associate Fellow* in their respective specialty.

* * * * *

II. That Article IX, Paragraph 3, of the Constitution of the International College of Surgeons be revised to read as follows:

Chapters other than the United States Chapter of the International College of Surgeons shall decide the amounts which they are to contribute to the International Treasury annually, provided that the contribution of each Chapter during the war period or other emergency shall be sufficient to defray its annual subscription to the JOURNAL OF THE INTERNATIONAL COLLEGE OF SURGEONS, the cost of diplomas for its own members, and other incidental expenses to which the central organization is subjected in relation to such Chapter, until such time as the Chapter in question can fully meet its financial obligations as outlined in the International Constitution and By-Laws.

* * * * *

III. That Article XX, Paragraph 1, of the Constitution of the International College of Surgeons be amended to read:

*(Continued on page 232)*

# Dermoplasty of Healed Burned Dorsum of the Hand

MAJOR JOHN F. PICK, F.I.C.S.*
MEDICAL CORPS, ARMY OF THE UNITED STATES

THE reconstruction of the healed burned hand is one of the major problems of this war. The most frequently burned portion of the hand is its dorsum. The reason for this frequent occurrence is that when the soldier in battle or accident is exposed to flame or explosion he reflexly reaches for his face to protect it from injury. The back of the hand is thus the receptor of an insult which otherwise would blind or deface the victim (fig. 1).

The degree to which the back of the hand is burned determines in large measure the degree of the loss of function of the part. This may range anywhere from partial interference with flexion to a "frozen hand" (fig. 2). This is an extremity which after healing has taken place has a scarred dorsum, is extremely sensitive to changes in temperature, is vulnerable to the slightest trauma, has little or no grasping ability, and may be angry looking and unsightly to behold (fig. 3).

The hand being the most useful appendage of man, a complex, delicate and subtle machine, injury to it can produce relative invalidism of the whole individual. Without the use of his hands man becomes almost helpless, for they are not only grasping organs but instruments of expression, accomplishment

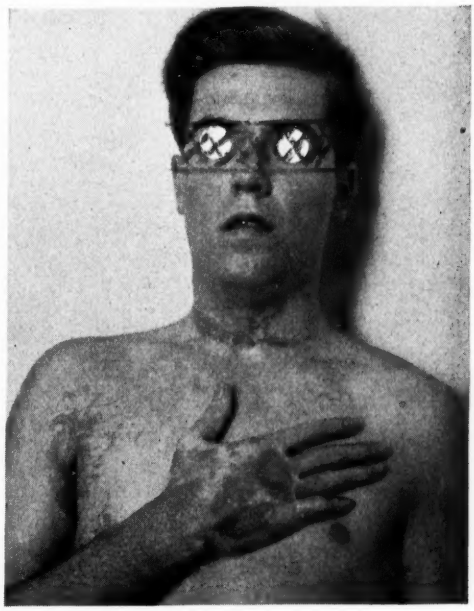

Fig. 1. Patient who saved his eyes by covering them with his hand, with a resulting burn of the dorsum of the hand and the unprotected neck.

Fig. 2. Maximum amount of flexion of a hand whose dorsum was severely burned, with "freezing" of the extensor tendons.

Presented at a study guild meeting (District 5) of the International College of Surgeons, Birmingham, Ala., Feb. 22, 1945.

* Formerly on the surgical staff, The University of Illinois Medical School, Chicago, Illinois.

and, most of all, feeling. It would be difficult to conceive of a Paganini, a Liszt, a Houdini or a Helen Keller without hands. It therefore becomes imperative to do all that is possible to restore an injured extremity to as near its original state as possible.

The deformity resulting from a burned dorsum of the hand is currently

Fig. 3. Close-up view of a hand with a healed burned dorsum (ten months after the injury), illustrating conspicuousness of the extremity, scarring and unsightliness.

and as a rule remedied by total excision of the scarred skin and fibrotic subcutaneous tissue and covering the remaining surgical defect with a split skin graft. That as a rule fairly well resolves the immediate problem—the restoration of flexion. The latter, however, though important, is but one of the many functions of the hand. Without overlooking the immense contribution which the split graft has brought to clinical surgery, particularly in treatment of extensive burns, its limitations must be recognized, to avoid abuse of a good thing. The routine use of the split skin graft does not always rehabilitate the burned hand completely, because it has certain inherent limitations which occasionally stand permanently in the way of the total reclaiming of the extremity. Like any free graft, it is a physiologic patch and sometimes only a biologic dressing (fig. 4). From the moment it is severed from the body economy, certain irremediable, microscopic as well as

Fig. 4. Hands of a 23-year-old soldier repaired with split skin grafts (one year after the operation). The grafts used were 20/1,000 inch (0.05 cm.) thick. The pigmentation is obvious and complete. Pseudokeloids about the edges in the region of the wrists and the middle fingers can be seen. The "glovelike" patched appearance of the hands in this case is the outstanding objection. The hands are functionally good, but are esthetically and socially objectionable.

gross changes begin to take place. They may be inconsequential. More often they lead to pigmentation, subcutaneous scarring, loss of elasticity or permanent loss of color. Since the hand is such an obvious exposed part of the person, any one of the aforementioned factors explain the concern on the part of many young soldier patients over the obviousness of their hands, in spite of the fact that they are well functioning appendages after having been repaired with split grafts. No young man in contemplating his future, his postwar search for a job or his return to his

intended one, is going to be pleased with ultimate results of an operation which herald his approach or appearance. Though the functional problem may well have been solved, in the young the psychologic problem has not been. The ultimate import of the latter may even overshadow the former and become a matter of sociologic concern. As for my part, I have been on many occasions impressed with its reality.

Where, then, lies the answer? To me it lies in the fact that there is no substitute for normal anatomy. I feel so strongly about that, that it has become a principle and an ideal toward which to strive. Since the split free skin graft is essentially the product of human ingenuity rather than an adequate anatomic replacement, one must then, in order to attain normalcy, strive to replace the loss by its equivalent. The nearest approach to the ideal normal is the dorsal skin and subcutaneous tissue of the forearm. The technical surgical problem therefore resolves itself into transporting this under as ideal conditions as possible to the dorsum of the hand.

## SURGICAL PROCEDURE

Whatever the reason for the loss of the skin of the dorsum, whether it be due to a burn or a neoplasm (fig. 5), the restitution can be more fully attained by the following method:

After excision of the affected dorsal surface of the hand, two roughly parallel incisions are made extending onto the dorsum of the forearm as far as necessary and consistent with the principles covering a pedicle graft (fig. 6). This outlined flap is then carefully undermined, its scant subcutaneous tissue being taken with it (fig. 7). More often than not, if the incisions have been made to the proper depth, the skin being normally loose over the forearm, the flap can be elevated by undermining it with the gloved finger of the surgeon. The loosening of the flap from the forearm permits one to advance it anywhere from 1½ to 2 inches (3.8 to 5 cm.) distal-

Fig. 5. Epithelioma of the back of the hand of two years' duration treated with radium and x-rays but never completely healed. The original extent of the lesion can be detected by the scarring proximal to it for a distance of 2 inches (5 cm.). Excision included both the lesion and the scarred areas (see figures 6, 7 and 8, showing a triangular piece of scarred dorsum still in place and outlined feebly by brilliant green, and figures 9, 12 and 13, depicting the result ten months after the operation).

Fig. 6. Same hand as in figure 5, with the epithelioma outlined circularly. The wedge-shaped area proximal to it is dense scar tissue remaining after radium and x-ray treatment had been given for two years. A flap from the ulnar side of the forearm is indicated. Note that the incision skirts the head of the ulna to avoid producing a scar over the bone. Also note the wedgelike palmar deviation of the flap to permit normal creasing of the wrist later and avoid lineal contracture. The needles in the dorsum of the forearm are for the infiltration of procaine hydrochloride solution and are incidentally placed at about the point to which the undermining of the flap will proceed. The patient's fingers are covered by rubber cots.

ward (fig. 8). If the hand is then dorsiflexed at the wrist, another 1 to 1½ inches (2.5 to 3.8 cm.) may be gained in the advancement. Hence an excision

up to 3½ inches (9 cm.) from the dorsum of the hand can be made and covered with the nearest possible anatomic equivalent. The dorsum of the hand of an average male adult is seldom over 3½ inches. Even so, when complete excision has to be done and when the quality of the circulation in the skin may not be equal to the task, it is advisable to practice "delay" in the removal of the flap. Such a decision naturally is a matter of surgical judgment and experience. In such a radical procedure, it is better first to mobilize the forearm flap and investigate its integrity before excising the affected dorsum of the hand and advancing the skin of the forearm onto it.

Fig. 7. The flap dissected back to the forearm after excision of the neoplastic ulcer. Skin and subcutaneous tissue of the forearm are ready to be undermined. Note that distally the skin of the webs has also been undermined so as to reform a normal angle of incidence of the webs with the palmar folds.

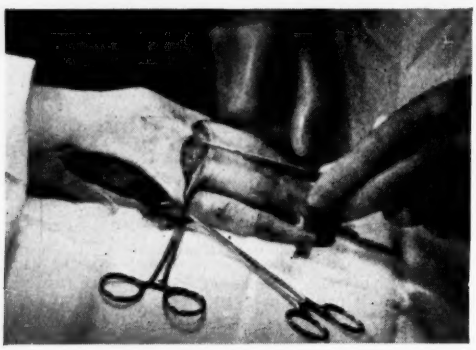

Fig. 8. The flap mobilized and advanced to reach the webs of the fingers. The proximal portion of the flap is already advanced and sutured about the wrist. A triangular piece of scar tissue is about to be excised. Excision of scars should be postponed, if possible, until all else has been accomplished, for the scar serves as good traction surface and when at last excised leaves a fresh, untraumatized skin edge.

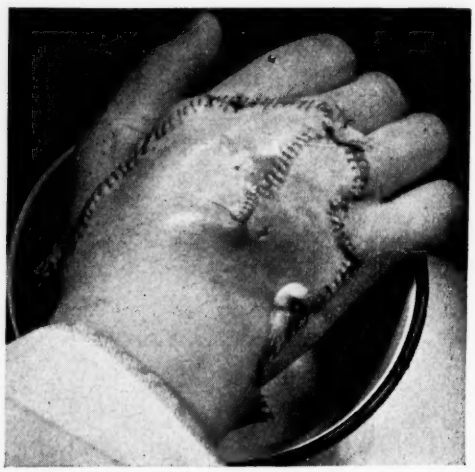

Fig. 9. The central dorsal scar has been excised, the two distal extremities of the flap approximated and the entire pedicle graft sutured over the dorsum. To the right of the proximal extremity of the central suture line is a small perforation for drainage. Two reinforcing mattress sutures are in place, tied over bits of gauze. When one is suturing the flap in place, it is well to pick up innocent underlying tissue now and then, so as to prevent the graft from shifting on its edges. Nipples of skin, one on each side of the wrist, result from crowding of the forearm skin onto the hand. These shrink rapidly or may be secondarily ablated.

The affected dorsum of the hand having once been excised and placed in dorsiflexion, the distal part of the flap is temporarily attached to each dorsal fold of the interdigital webs. Or, if the skin over the metacarpophalangeal joints was not excised, the flap is attached to the skin just proximal to the joints. At this point it must be emphasized that when one is excising

the affected skin of the dorsum of the hand, the excision must be so planned that the resulting suture line is either somewhat proximal or somewhat distal to the metacarpophalangeal joints. This obviates the nuisance of a scar over a joint.

After the forearm flap has been tem-

Fig. 10. A hand in which the lesion or scar does not involve the metacarpophalangeal joints, so that a short additional distal flap can be combined with one from the forearm, with a resulting suture line like the letter "H". The use of petrolatum-covered soft rubber tubes for mattress tension is also illustrated. Note the relatively large amount of skin gained from the finger webs after undermining.

porarily attached to its predetermined distal position, with the hand in dorsiflexion, a temporary anchor suture is placed through the flap on each side of the wrist, approximating it to the concavity of the dorsum of the wrist (fig. 9). The entire flap is then permanently and completely sutured to the two sides of the extremity by either interrupted or continuous but "advancing" sutures. This opposes the tissues in proper tone and of course in the direction of greatest benefit, which is distalward.

After the entire area of the dorsum of the hand has been covered, three or four mattress sutures are placed through the skin now overlying the wrist and anchored to the underlying bed (fig. 10). These mattress sutures are then tied over a large soft rubber catheter or tube rolled in petrolatum

Fig. 11. Immediate postoperative condition of the hand shown in figure 3 in position on a cock-up splint, before the dressings were applied. Note the three mattress sutures splinting the skin of the webs against the distal portion of the flap to keep the dorsal suture line from climbing onto the metacarpophalangeal joints.

gauze. The ends of the catheter may be loosely tied under the wrist, if desired. The object to be realized, whatever the method, is the obliteration of the dead space which unavoidably exists between the flap and the concave dorsum of the wrist once the distal end of the graft is anchored to the fingers. Should this detail be omitted, the flap would form the hypotenuse of a triangle, whose other two sides would be the distal portion of the forearm and the dorsum of the hand respectively.

The remainder of the operation consists of simply applying dressings appropriate for a pedicle flap and a cock-up splint which will maintain the hand in dorsiflexion for sixteen to twenty-one days (fig. 11).

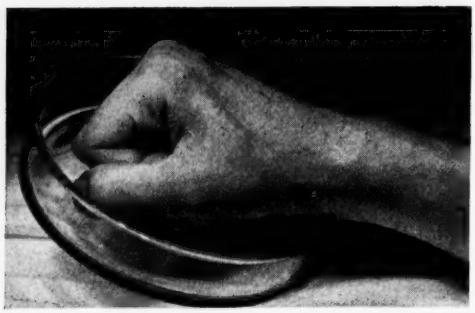

Fig. 12. Postoperative (three weeks) condition of the hand shown in figure 4. Flexion of fingers is almost complete. The proximal portion of the lateral incision is barely visible. The insertion of the glass object under the wrist represents the photographer's idea of eliminating a slight tremor of the wrist during the exposure.

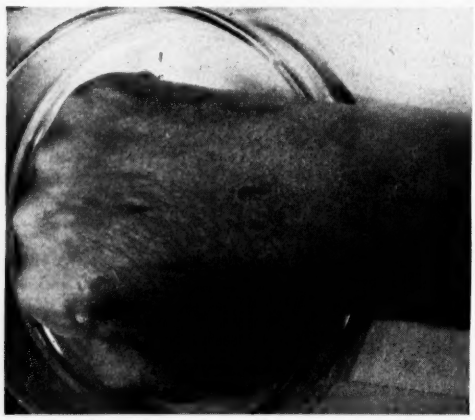

Fig. 13. Dorsum of the same hand shown in figure 12. The scar proximal to the metacarpophalangeal joints is only slightly visible. Note the hair from the wrist advanced with the flap to the dorsum of the hand.

## POSTOPERATIVE TREATMENT

With the expiration of two weeks postoperatively, the cock-up splint should be removed every day, the hand and forearm properly cleansed and light passive flexion instituted to inaugurate the stretching of the skin over the wrist. Within a week, it will be found that the patient is able to project the hand on the forearm (fig. 12). Complete flexion at the wrist is still difficult and undesirable (fig. 13). It overstretches the dorsal suture line. At this point active and moderate use of the hand can be permitted. Within a week to ten days the patient is able without effort to flex the extremity at the wrist (fig. 14).

Fig. 14. Same hand as in figure 2, one month after the operation. Flexion is complete.

## SUMMARY AND CONCLUSIONS

The new reconstructive surgical procedure that is submitted is thought to have in selected cases certain merit not realized by other methods. The basis of the procedure is the employment of a pedicle flap advanced from the forearm onto the dorsum of the hand after excision of the scarred tissue from the latter. By making two parallel incisions up the forearm, for a distance of one-half to two-thirds its length, mobilizing the skin and subcutaneous tissue between the incisions and placing the affected hand in complete dorsiflexion with complete extension of the digits, the tissue of the forearm can be advanced distalward to cover up to 3½ inches (9 cm.) of the dorsum of the hand.

This procedure obviates the employment of the commonly used split free graft and hence avoids the undesirable reactions frequently resulting from it, such as bronzing and other discolorations, a patched and conspicuous appearance of the hand, sensitivity to changes of temperature, and shrinkage of the graft with delayed interference with flexion of the fingers.

However, like any surgical procedure, this new operation has certain disadvantages:

1. An incision has to be projected for a variable distance on each side of the forearm.

2. The operation is not feasible for very young children, for very old people, or for patients with poor circulation or meager elasticity of the skin. These factors, of course, must be evaluated before the procedure is undertaken.

3. The more ideal results to be attained by this operation take a little longer to realize than the less ideal results obtained by the use of the split skin graft.

4. The procedure may resolve itself into a two stage operation when the integrity of the skin of the forearm does not permit a first stage advance. It does, however, obviate "borrowing from Peter to pay Paul"; that is, it does not leave a relatively scarred donor site, which is unavoidable in the taking of the split skin graft.

SUMARIO

El nuevo procedimiento quirúrgico de reconstrucción aquí sometido se acredita en casos escogidos y tiene mérito que no se obtiene con otros metodos.

La base del procedimiento es el empleo de una falda a pediculo formado del antebrazo hacia el aspecto dorsal de la mano, después de extirprar todo el tejido cicatricial. Haciendo dos incisiones paralelas sobre el antebrazo por una distancia de la mitad o dos terceras de la longitud del antebrazo, movilizando la piel y el tejido subcutaneo entre las incisiones y colocando la mano en completa dorsiflexión y extensión de los dedos, los tejidos del antebrazo pueden ser avanzados suficiente para cubrir 3½ pulgados (9 cm.) del dorsum de la mano.

Este procedimiento evita el uso del injerto (partido) livre y por consiguiente evita los reacciónes adversos, tal como descoloramientos a bronce y otros colores que por contraste atraen atención, sensibilidad a los cambios de temperatura, y encogimiento del injerto, con retardo de la flexión de los dedos.

Como muchos procedimientos quirúrgicos, esta nueva operación tiene ciertas desventajas:

1. La incisión es porjectada por distancias variables en cada lado del antebrazo.

2. La operación no es factible en la juventud, en los de edad avanzada y en pacientes con debil circulación o poca elasticidad de la piel.

3. Los resultados más ideales obtenibles por esta operación necesitan mayor tiempo para realizar que los resultados menos satisfactorios con el uso del injerto de piel partida.

4. Este procedimiento podrá ser resuelto en dos periodos cuando la integridad de la piel del antebrazo no permite una operación de adelanto en primer periodo. Esto sin embargo evita el prestar de Pedro para pagar a Paulo; esto es, no deja una cicatriz en el donador, lo que es inevitable cuando se usa el injerto partido de piel.

SOMMAIRE

La procédure nouvelle de chirurgie reconstructive que l'auteur nous présente offre dans certains cas des avan-

tages que ne réalisent pas d'autres méthodes. La base de la méthode est l'emploi d'un lambeau pédiculé avancé de l'avant-bras sur le dos de la main après l'enlèvement du tissu cicatriciel de celle-ci. En faisant deux incisions parallèles sur l'avant-bras de la moitié ou de deux tiers de sa longueur, on mobilise le peau et le tissue souscutané entre les incisions. On met la main affectée en dorsiflexion complète avec complete extension des doigts. Le tissu de l'avant-bras est avancé afin de couvrir 3½ pouces (9 cm.) du dos de la main.

Par ce procédé, on évite l'emploi de greffons coupés et aussi les réactions non désirables qui souvent résultent de leur emploi: telles que la discoloration, l'apparence cicatriciel désagréablé, la sensibilité aux changeménts de température, et le retrécissement du greffon avec interférence retardée de la flexion des doigts.

Néanmoins, cette opération a certains désavantages:

1. L'incision doit être projetée sur chaque côté de l'avant-bras.

2. L'opération n'est pas faisable chez les jeunes enfants, chez les viellards, chez les malades de circulation appauvrie et chez ceux de pauvre élasticité de la peau. Avant d'entreprendre cette procédure, ces facteurs demandent à être considérés.

3. Les résultats obtenus par cette méthode entraînent plus de temps et de soins que ceux qui resultent des anciennes méthodes.

4. On peut faire l'opération en deux temps, quand l'intégrité de la peau de l'avant-bras ne permet pas un avancement au premier temps. Cette procédure ne laisse pas de cicatrice disgacieuse.

## СВОД И ЗАКЛЮЧЕНИЯ

Предлагается новый реконструкционный хирургический метод, который в специальных случаях может дать некоторое преимущество недостижимое другими способами.

Основа этого метода заключается в употреблении висящего лоскута, перемещенного с предплечья на тыл ладони после удаления рубцевой ткани.

Делаются два параллельных надреза от тыла ладони до половины или двух третей предплечья; кожа и подкожный слой между надрезами освобождается для мобильности; пораженная рука помещается в полную дорсифлексию с пальцами совершенно выпрямленными; кожа предплечья перемещенная дистально может теперь покрыть 9 сантиметров тыла руки.

Этот способ делает ненужным употребление обыкновенного надрезанного и свободного кожного трансплантата, и, таким образом, избегает нежелательные результаты, часто получающиеся при последнем методе: бронзировка и обесцвечивание кожи, заплатанный и бросающийся в глаза вид руки, чувствительность к переменам температуры, котрактура трансплантата, которая позже мешает свободному сгибанию пальцев. Однако, как всякий хирургический метод, этот новый способ имеет некоторые недостатки:

1. Расстояние обосторонних надрезов предплечья непостоянное.

2. Операция эта не годится для очень маленьких детей, старых людей или для больных с плохим кровообращением и малой эластичностью кожи. Эти факторы необходимо взвесить до предпринимания операции.

3. Хотя результаты более идеальны, они требуют больше времени, чем менее идеальные результаты, достигающиеся при обыкновенном методе надрезанного кожного лоскута.

4. Когда качество кожи не позволяет одностажное перемещение кожи, то двухстажная операция становится необходимой. Но зато не нужно «одолжить у Петра, чтобы заплатить Павлу», т. е. этот метод не оставляет очень зарубцованную донорную площадь, которая неизбежна при употреблении надрезанного кожного лоскута.

# Use of Single Massive Doses of Sulfonamide Compounds

## A Preliminary Report

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IN a previous article by one of us (B.I.G.),[1] scientific evidence was presented to demonstrate the rate of absorption of sulfanilamide (chosen as a typical sulfonamide compound) from various cavities of the body and under varying pathologic conditions. This communication is to further the discussion relative to treatment with sulfonamide compounds, with comment on the rationale of their administration. During the preparation of the original article our attention was attracted to certain observations which to the best of our knowledge had not been previously publicized: (1) that the presence of a sulfonamide drug apparently produced an early attenuation of the pathogenic organism;[2] (2) that the organism apparently could become resistant to sulfonamide compounds very rapidly, and (3) that continuous administration of the drug might produce a clinical picture which could mask the pathologic process present.[3] In our own clinical observations, especially in peritonitis, we found that one large massive implantation of a sulfonamide compound in the abdomen produced as good results as those reported by other observers who after such an application continued to give the drug by mouth or parenterally. These observations led us to the conclusion that there were probably certain factors in the administration of these drugs which had not been given sufficient attention. After several years now, we see no reason to change our original plan of using single massive abdominal instillations for peritonitis. We believe our results are as good as and maybe a little better than those reported after continuous administration.

Our patients at times have shown a temporary reaction to chemotherapy, never serious. In the main, their response has been prompt, their toxemia has been controlled and their recovery has been extremely rapid. From these observations we have drawn the following hypothesis relative to chemotherapy with sulfonamide compounds: The greatest effect is attained by a massive, rapid, overwhelming assault on the invading organism without an undue disturbance of the normal mechanisms of defense. In other words, the attack may be likened unto the present tactical approach of the so-called blitz in warfare. While the actual mechanism of the action of the sulfonamide drugs in vivo is not completely clear, it has been assumed that it has to deal, directly or indirectly, with the pabulum on which bacteria feed, and that the actual de-

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struction of the organism is still due to native defenses. From the bacteriologic standpoint there are few organisms which can withstand decided changes in their habitat for any length of time, provided they are not afforded a sufficient period for involution or the development of a protective mechanism. In this respect it was interesting to note that when we treated patients with early stages of gonorrhea, in whom the infection was primary, one, and occasionally two, closely repeated massive doses of a sulfonamide compound completely eradicated the disease as far as any clinical evidence could be obtained and these patients stayed "cured." On the other hand, failure to obtain clinical results suggested that the present infection was a reinfection or the patient had previously been given chemotherapy or that a long period had elapsed between the knowledge of the onset and the time of beginning treatment. This was likewise found true in cases of salpingitis and of puerperal septicemia.

In keeping with our hypothesis and these findings, the successful use of chemotherapy with sulfonamide compounds is a matter of introducing a high concentration, early, at the site of bacterial invasion. It is our opinion that the original idea of maintaining a certain blood level is based on a false premise. There is a great difference between the level in the circulating blood and the level in the localized involved tissue. It was interesting to note, in our previous work with absorption from the peritoneal cavity, that the nearer normal the peritoneal cavity, the higher the blood level. On close examination of this statement, one realizes that the relation is self-evident. The more edematous the tissue, the greater the reduction in circulation to, and permeability of, the cell. Therefore, the level of the drug in the circulating blood can bear no relation to the level in the involved tissue because of this disturbed physiology.

The problem of reactions to sulfonamide compounds must be given serious consideration. When the massive single dose was first suggested by the surgical department, the other members of the clinic were fearful of the results. However, the surgical department had had ample opportunity to study the reactions to the massive dose from the instillations in the abdominal cavity. As far as we know, there have been no words of admonition published on the limited use of abdominal implantations; rather, it has been emphasized, and there seems to be a growing opinion among surgeons, that the dose frequently is too small, and the tendency is now to increase the amount. We have found that a child of 8 or 9 years handles 150 grains (9 Gm.) of sulfanilamide as well as the adult of 30 or 40. In other words, the surgeon is actually doing, to a great measure, the very thing we are advocating. It is not a question of age, weight or general physical condition, but rather one concerning the severity of the invasion and the amount of drug necessary to act on it. Originally, we were of the opinion that it was the basic sulfonamide radical which carried the therapeutic value. This has been changed. In several cases in which a massive dose of sulfanilamide was given, there was no improvement to the patient. Forty-eight hours later, a repeat dose of sulfathiazole or sulfadiazine brought an immediate and permanent improvement. The presented technic offers another advantage. By the single massive dose, information as to the specificity of the drug is immediately obtained. The loss of time is short, and the debility of the patient is not

allowed to proceed to a critical stage before a shift to another drug can be made. We do not hesitate to repeat a massive dose in eighteen to twenty-four hours if another derivative is indicated.

The next problem to be considered is the untoward reactions. Occasionally we see a slight body rash. Frequently we find the patient drowsy and slow in mental reaction for twenty-four hours. We have not been able to determine how much of this is due to the 2 ounces (60 cc.) of camphorated tincture of opium administered to prevent nausea and vomiting and how much may be attributed to the drug. In a large number of patients we have had but 1 that showed a marked psychosis. This patient had had a previous admission, three months before, and the usual homeopathic administration of a sulfonamide drug had been instituted. The record shows that she acquired a psychosis at that time. The diagnosis was "a questionable low grade pelvic pathology." The doctor in charge at the patient's first admission had since entered military service. When she was readmitted, with the same complaints, under the pressure produced by shortage of manpower insufficient attention was paid to her and a massive dose of a sulfonamide compound was ordered. A marked psychosis promptly developed, which lasted three days. This case emphasized to us the value of not superimposing a massive dose when the patient within a reasonable period has had prolonged therapy with a sulfonamide compound or when there is a history of untoward reactions. Another factor which was quickly demonstrated was that, while the massive dose rapidly brought about a clinical cure, the patient must be given sufficient rest in bed to overcome a physiologic problem brought about by such chemotherapy. Patients treated in this way are weak for several days. When placed on their feet, many manifest a dizziness which takes some time to overcome. We found that the patients with gonorrhea could not safely drive an automobile or successfully use a typewriter for five to seven days following the administration of the drug.

It has been necessary for us to make our own yardstick for the so-called "massive dose therapy." Since we found that 150 grains (9 Gm.) of sulfanilamide proved satisfactory in the abdomen, we adopted this as our unit. This amount, of course, produces nausea and vomiting in many cases. From numerous experimental attempts, camphorated tincture of opium was found to be the most satisfactory drug to alleviate these reactions. Today, our technic is as follows: Two ounces (60 cc.) of camphorated tincture of opium is given in a small amount of water, and one-half hour later half of the predetermined dose of the sulfonamide compound is given; one-half hour later, the remaining half is administered. We believe, from experience, that if there is a toxic limit to the dose of a sulfonamide compound, the dose we use is well under that limit. We have seen no serious change in blood counts. The first case of fatal agranulocytosis from a single abdominal instillation has just been reported elsewhere.[4] We have seen no serious changes in the red cells or in the hemoglobin. To the best of our knowledge, there has been no active or residual urinary problem. In connection with dose tolerance, we would cite the case of a woman in her early twenties for whom we made the original diagnosis of acute salpingitis. She presented a picture of an extremely ill patient of several days' duration, markedly dehydrated; the anterior abdominal wall was resistant but not rigid. She was

admitted to the hospital at 3 o'clock in the afternoon, and a massive dose of sulfanilamide was administered. At 9 the next morning we were able to determine that there was a mass in the right lower quadrant of the abdomen and unquestionably an active peritonitis. At 10 the abdomen was opened and the diagnosis of peritonitis confirmed. She had a perforated appendix, an abdomen filled with fluid giving off a colon odor and all the picture of a generalized peritonitis due to a perforated appendix. Without hesitation, 150 grains (9 Gm.) of sulfanilamide was implanted and the abdomen closed without drainage. With one exception this patient presented the most cyanosis we have ever seen resulting from a sulfonamide compound. For eight hours postoperatively she was unable to retain food, and this occurred periodically during the next twenty-four hours, though she received a tray at each mealtime. One week later the wound broke down and there was a profuse discharge of pus, but she made a convalescence meriting no particular consideration.

Within recent weeks we encountered a general peritonitis in a child 3 years old. On admission the child was extremely toxic, distended, lethargic and apparently desperately ill. The abdomen contained a gangrenous appendix with generalized peritonitis. One hundred and fifty grains (9 Gm.) of sulfanilamide was placed in the abdomen before closure. Forty-eight hours postaperatively the patient was extremely cyanotic and in a lethargic condition. For once, we felt we had overdone our sulfanilamide therapy. In our anxiety to speed the operative procedure and get the child back to bed, note was not made of the condition of the peritoneum, both parietal and visceral. Had we paid sufficient attention, we probably should have noted that the peritoneum was nearly normal in appearance and, with this in mind, we should have reduced the amount of the drug instilled, because, as stated previously, the nearer normal the peritoneum the greater the absorption. Incidentally, the little fellow progressed nicely for one week; then a visitor to the ward gave him a nickel, which he promptly swallowed and which remained in the antrum of the stomach for twenty-four hours, bothering the patient not at all but giving the surgeon a headache. However, this passed without complication. A superficial incisional abscess developed, but on evacuation healed promptly.

Because these patients were very sick and to make continuous venous punctures to satisfy our curiosity about the blood level of sulfanilamide seemed unfair, it was not done. In spite of frequent statements that blood levels reach their peak within a definite period after the ingestion of the drug, the results of our studies on normal persons to date definitely refute this observation. In a study now being carried out by one of us (S.W.M.) it has been noted that there is no specific relation between the time of ingestion and the time of the highest percentage level in the blood of normal people. The interval can range from six to twenty-seven hours or longer. This raises the question of time of administration, condition of the stomach with reference to food and starvation, fluid level in the tissues and many other points which are now being explored. Possibly the most interesting finding to date is that there is a varying relationship between the free and the acetylated drug at varying periods. Beyond this, for the present at least, we refrain from making any further comment, but we hope to publish these facts in the near future.

We herewith describe the clinical picture of a few cases which we think are of interest with regard to the administration of massive doses of sulfonamide compounds.

REPORT OF CASES

CASE 1.—The diagnosis was pyometrium following incomplete abortion. The patient's temperature on admission was 104° F. With the aid of light nitrous oxide anesthesia, the cervix was dilated, and the uterine cavity was swabbed out with a sponge. The postoperative temperature was 105° F. One hundred and fifty grains (9 Gm.) of sulfanilamide was given by mouth. After twenty-four hours the temperature was 99.4° F. After forty-eight hours it was normal. The patient was discharged well five days after admission.

The operative procedure in this case can be questioned. Had an attempt been made to saturate the patient there would have been (*a*) a delay and (*b*) a possible resistance to sulfonamide compounds set up by the invading organisms. Neither condition would have been good for the patient. From past experience with this type of infection, we knew that either sulfanilamide or sulfathiazole would take care of the infection. By the massive dose procedure the proper drug would be determined within hours. The effect of a change of drug has been dramatically demonstrated on several occasions.

CASE 2.—The patient was delivered of a macerated stillborn fetus at full term. Her serologic reaction for syphilis was positive. For eight days postpartum she had spiking of temperature to 101° F. After she was given 150 grains (9 Gm.) of sulfathiazole, the highest temperature was 99.4° F., twenty-four hours later. Four days after receiving the drug she was discharged, free of all clinical evidence of infection.

Here is demonstrated the clearcut action of the single dose after sufficient time had elapsed to show that the low grade infection would remain persistent for some time.

CASE 3.—The diagnosis was meningococcic meningitis. The spinal fluid on the patient's admission to the hospital was cloudy and revealed meningococci. The patient was moderately delirious. Her axillary temperature was 102° F. She was able to take 150 grains (9 Gm.) of sulfadiazine by mouth. After eighteen hours, the temperature was normal, and the patient was mentally clear and had no headache. After twenty-four hours, the oral temperature had risen to 100.2° F. Another dose of 150 grains (9 Gm.) of sulfadiazine was given. After forty-eight hours, the spinal fluid was clear, and smear and culture failed to reveal meningococci. Fifteen grains (0.9 Gm.) of sulfadiazine was given every four hours for twenty-four hours. The patient was discharged twelve days after admission. Follow-up examinations showed no residual problems.

The response in this case was extremely rapid and the spinal fluid promptly showed that the invading organisms were destroyed. The rebound rise in temperature may have been caused by absorption due to the massive invasion. However, when one is dealing with human beings one dare not be overzealous with experimental science, and in this case the small doses, whether necessary or not, were given to combat the temperature reaction.

CASE 4.—The diagnosis was meningococcic meningitis. On admission to the hospital the patient was irrational and almost moribund. A spinal puncture was made with the aid of general anesthesia. The fluid was cloudy; meningococci were revealed by culture, though not by smear. The patient was given 112½ grains (6.75 Gm.) of sodium sulfadiazine intravenously. Forty-eight hours later 150 grains (9 Gm.) of sulfadiazine was administered orally. After forty-eight hours the spinal fluid was clear but coagulated. The patient was discharged as normal nine days

after admission. There were no urinary complications.

In view of the seriousness of the condition on the patient's admission, a massive dose of sodium sulfadiazine was given intravenously. This was not followed by any demonstrable clinical reaction. This brings up a question to be answered in the future. Are the reactions to such drugs due to the total dose or only to the unused portion that is not needed to combat the pathologic condition? Again human experimentation does not permit a great latitude. It is possible that the second dose was not necessary.

CASE 5.—The diagnosis was acute salpingitis. The patient's temperature on her admission to the hospital was 101.4° F. One hundred and fifty grains (9 Gm.) of sulfanilamide was given. Not until seventy-two hours had elapsed did the temperature reach normal. It stayed normal thereafter.

This case demonstrates the fact that all patients do not respond dramatically. Whether this is due to slow absorption, which is being studied in normal persons, to resistance of the invading organisms to sulfonamide compounds or to local changes in the tissues that inhibit or delay saturation is a question to be answered in the future. But it must be kept in mind that there can be a delayed reaction and that the physician, provided the condition of the patient warrants it, must not be too energetic.

CASE 6.—The diagnosis was acute exacerbation of a chronic pelvic inflammatory disease. Under observation the temperature increased to 102.8° F. One hundred and fifty grains (9 Gm.) of sulfanilamide was administered by mouth. In twenty-four hours the temperature was normal and the patient was free of tenderness in the lower part of the abdomen.

Here is a definite history borne out by subsequent findings of organized pathologic changes over a long period of time. Yet, in contradistinction to case 5, the results were prompt.

CASE 7.—The diagnosis was postpartum septicemia (home delivery). Chills and fever began forty-eight hours after the delivery. On the patient's admission to the hospital, five days postpartum, her temperature was 104.6° F. She was given 150 grains (9 Gm.) of sulfathiazole. The highest subsequent temperature reading, twenty-four hours later, was 99.4° F. She was discharged as cured eight days after her admission.

On admission there were marked thickening of the left broad ligament, induration and palpable dulness in the lower left abdominal quadrant above Poupart's ligament. The impression was that an abscess was developing. This condition promptly cleared up with the improvement of the clinical picture. We have seen this repeatedly in cases of acute salpingitis in which tubes were definitely palpable but in which the pathologic changes resolved after administration of a sulfonamide compound and at later operative intervention for some other cause the pelvis was found to be normal and there were no adhesions or only a few non-symptom-producing ones.

CASE 8.—The diagnosis was acute exacerbation of an old pelvic inflammatory disease complicated with arthritis. The duration of the present acute illness was ten days. The chronic condition had been present for ten years. The patient's temperature on her admission to the hospital was 104° F. She was given 150 grains (9 Gm.) of sulfathiazole, but forty-eight hours later there was no improvement. She was then given 150 grains of sulfanilamide. After the administration of the latter drug there was considerable improvement in the clinical picture for five days. Then the pain and discomfort returned, and

the temperature increased to 102° F. It was decided not to attempt further therapy with sulfonamide compounds, and 200,000 units of penicillin was given. This brought prompt and lasting improvement.

This case definitely illustrates the latitude this therapeutic technic gives. Within a period of seven days the value of the sulfonamide compound was evaluated and penicillin was given.

## COMMENT AND CONCLUSION

The physician must ever keep in mind that, with few exceptions, therapy is only an adjunct to normal body defenses. This has been ably expressed by Dr. Alexander A. Bogomolets,[5] "Clinical therapy (chemical, physical, surgical) directed toward the destruction of the cause of the disease must simultaneously be, under all circumstances, a pathogenetic therapy, i.e., it must be directed toward supporting and strengthening those reactions of the body which provide the best obstacles for the development of any given disease. The healing power of the nature of the body—vis medicatrix naturae—which was always the best ally of both patient and physician in their fight against disease, requires the deepest study. The chief task of clinical medicine is to learn to control this power."

## CONCLUSION

This radical but sound procedure for the use of sulfonamide compounds in our hands has proved extremely satisfactory and worthy of continuation. There have been no untoward results, and we believe that the morbidity of this procedure is less than that observed with the usual present day method of continued periodic administration of small doses. We present these facts as a preliminary to further investigation, with the hope of stimulating the interest of other workers in studying the procedure.

## REFERENCES

1. Golden, Benjamin I.: Absorption Rates of Sulfanilamide, Am. J. Surg. *62*:235–240 (Nov.), 1943.
2. Mendelbaum, M.: Action of Sulphonamides and Their Derivatives on Bacteria, Nature *147*:3722 (March 1), 1941.
3. Finney, J. M. T.: Personal Communication, Am. J. Surg. *62*:239, 1943.
4. Arrowsmith, Binkley and Moore: Fatal Agranulocytosis Following Implantation of Sulfanilamide, Ann. Int. Med. *21*:323 (Aug.), 1944.
5. Bogomolets, Alexander, A.: Anti-Reticular Cytotoxic Serum as a Means of Pathogenetic Therapy, Am. Rev. Soviet Med. *1*:101 (Dec.), 1943.

## SUMARIO

La suministración de compuestos sulfonamidicos en dosis masivas y únicas es, según los autores, un método de quimiterapía radical pero seguro. En la experiencia de los autores este tratamiento se ha mostrado muy satisfactorio y digno de continuarse, como muestran los reportes de casos adjuntos. Los autores no han encontrado ningunos efectos adversos y creen que la morbidad es menor con este procedimiento que cuando se usan dosis diarios. Este informe tiene por objeto estimular las investigaciones posteriores sobra el procedimiento.

## RÉSUMÉ

Les auteurs sont d'avis que l'administration des composés sulfonamides en grandes doses est radicale mais qu'elle est aussi une méthode efficace de chémotherapie. Cette méthode est satisfaisante et se recommande par ses heureux résultats, ainsi que le démontre l'analyse des cas que rapportent les auteurs. Il n'y eut aucun incident désagréable. La morbidité de leur méthode d'emploi est moindre que celle des méthodes couramment employées. Cette communication est préliminaire à d'autres recherches. Elle a pour but d'encourager d'autres enquêteurs à étudier la méthode.

## СВОД

По мнению авторов, применение сульфонамидов в одной массивной дозе является радикальной, но здравой химикотерапевтической методой.

По их опыту эта метода оказалась очень удовлетворительной и заслуживающей продолжения применения, как иллюстрировано доложенными случаями.

Неблагоприятных результатов не было. Они думают, что при этом способе неприятный эффект меньше, чем при теперешнем способе продолжительного применения.

Эти факты представлены предварительно до последующих изысканий и с надеждой возбудить изучение этой методы другими исследователями.


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## ACTIVITIES OF BOARD OF TRUSTEES

*(Continued from page 216)*

At the biennial meeting of the House of Delegates any article of the Constitution and By-Laws of the International College of Surgeons may be amended by a two-thirds vote of the delegates and officers registered at the meeting, provided that the resolution to effect the change shall be presented on the first day of the meeting of the House of Delegates, and final action taken on the last day of said meeting, and that a period of not less than twenty-four hours shall elapse between the time of presentation and the time of final ratification by vote of the House of Delegates.

* * * * *

### IV. That Article X, Paragraph 1, of the By-Laws of the International College of Surgeons be changed to read as follows:

Any individual who shall be qualified for admission to any of the respective Chapters of the International College of Surgeons, as is otherwise herein provided, shall be entitled to such admission upon written application to the Chapter. The Chapter shall, according to its own rules, consider the application and determine its disposition. If it is decided to admit the applicant to membership, the secretary of the Chapter shall submit the application, together with the decision aforesaid, to the International Board of Trustees, who will admit or reject the applicant, which action shall be final.

* * * * *

### V. That Article III of the Constitution of the International College of Surgeons be made to read as follows:

Section 1

*Membership*

The membership of the National Chapters shall consist of eight different classes of members:

1. Matriculate
2. Affiliate
3. Associate
4. Fellow
5. Associate Fellow in Anaesthesiology, Pathology, Roentgenology
6. Master
7. Emeritus
8. Patron

Section 2

1. Matriculates, Affiliates, Associates and Fellows shall be graduates of approved medical schools and universities, shall have served their internships, and shall be of unimpeachable moral and ethical character; this, together with their surgical training and capabilities, to be vouched for by at least three Fellows of the International College of Surgeons.

2. Each Chapter shall have the right to provide, in its Constitution and By-Laws, for the age requirements for admission to the various classes of membership, depending upon the exigencies and conditions of the country in which the Chapter exists. Also, the respective Credential and Examining Committees of the various Chapters shall have the right to pass upon the moral, ethical and professional qualifications of their candidates, provided, however, that the fundamental requirements, such as proper graduation, training, competency and ethical and moral character, are adequately met, and provided that all members admitted to the various Chapters are approved by the International Board of Trustees.

Section 3

When a candidate has successfully met the requirements set down by the Examining Board and Credential Committee of a given country and has been admitted to the respective Chapter, the name and grade of this candidate shall be transmitted by the Chapter to the International Board of Trustees for approval.

Section 4

Members of all grades must constantly exert their efforts to improve themselves in the art and science of surgery and to impart their experiences to others, and must attend the Guild meetings in their respective territories.

*(Continued on page 281)*

# Cancer of the Colon

## A Survey of Current Trends in Diagnosis and Treatment

MOSES BEHREND, M.D., F.A.C.S., F.I.C.S.
PHILADELPHIA, PA.

PRIMARILY, any operation of magnitude on the colon requires adequate preparation. It is now recognized that upon this depends the success or failure of an operation. The paramount consideration must be the proper balance of fluids in the body. A week or ten days should always be required for the preparation of the patient. Ample time is then given for consultation with the internist, for the number of laboratory examnations required, and for the proper use of the various other means available for bringing the patient to the highest degree of operability. The balance of the proteins and the total serum protein, the alkali reserve, the urea nitrogen, the blood sugar and the state of the urine must all be determined in advance. While all these laboratory tests are of great importance, it is also incumbent on the surgeon to place the colon in such a condition as to make the operation safe. This can be accomplished by the administration of succinylsulfathiazole (sulfasuxidine) in the dosage of 0.25 Gm. to each kilogram of body weight. The daily dose is then administered from this estimation. It has been proved by bacteriologic examination that the bacterial flora in the colon can be reduced from 100,000,000 to a field to 100. Penicillin (100,000 units) should be given at least three or four days before the operation and the same number of days after the operation, not for the purpose of affecting the colon bacillus but to prevent a mixed infection from pus germs. Estimation of the prothrombin time should always be made while a sulfonamide compound is being administered. It will often be found to be reduced, which will explain bleeding following operations on the colon. It is generally conceded now, with the use of succinylsulfathiazole, that it is not necessary to place the patient on a liquid diet. Daily colonic irrigations are not essential. With the use of this drug the contents of the bowel are reduced to a minimum. The same holds true if a low residue diet is allowed instead of an absolute liquid diet. When a liquid diet is used, orangeade, sweetened lemonade, tea and the various soft drinks, in addition to all kinds of clear soups, are given at two hour intervals. When necessary, daily blood transfusions are given. This is especially true when cancer affects the cecum and ascending colon. However, for selected patients in whom obstruction has been present and relieved, a liquid diet may be necessary in the preparation for operation. Again, daily colonic irrigations are of considerable benefit in the preparation of patients of this type.

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From the services of Jewish and Mount Sinai Hospitals.
Read at a study guild meeting (District 5) of the International College of Surgeons, Birmingham, Ala., Feb. 22, 1945.

A complete blood count before operation is of vital importance, because many patients will be found to have a deficiency of red cells and hemoglobin. This is especially true of those in whom implantations of cancer are found in the cecum and ascending colon. The proper number of blood transfusions should be given until the patient becomes a good risk.

As the majority of cancers of the colon are found between the ages of 40 and 60, a cardiogram should always be taken.

### AGE AND INCIDENCE

While cancer of the colon is no respector of age, the greatest number of growths are detected between the fourth and sixth decades of life. The youngest patient I ever operated on was 20 years old; the oldest, 82. Of far greater importance is the interval that exists between the inception of the symptoms and proper treatment. Too many patients are referred to the surgeon too late for remedial surgical procedures. The question often has been asked: How long does the patient have symptoms before he seeks advice, or before the physician recognizes the fact that some serious condition is present in the colon. There seems to be a difference of opinion on this score. Some surgeons say the average time before the patient reaches the surgeon is seven or eight months; others say a year, and some say even a year and a half to two years. On account of the silent symptoms and the ability of some patients to withstand discomfort, the average time for operation may be prolonged. There is no question that the ring-shaped type of carcinoma found in the descending colon may be present from one to two years. When the growth is in the rectum, where there is irritation from the characteristic lesion, usually an ulcer, the patient may apply for help sooner than when cancer affects other portions of the colon. With cancer of the cecum and ascending colon, prolonged treatment for a blood dyscrasia may postpone the operation for a long time. This is also essentially true in the splenic area.

AGE INCIDENCE

| | |
|---|---|
| 20 to 30 years | 6 |
| 30 to 40 " | 23 |
| 40 to 50 " | 49 |
| 50 to 60 " | 88 |
| 60 to 70 " | 66 |
| 70 to 80 " | 31 |
| Total | 263 |

SEX INCIDENCE

| | |
|---|---|
| Male | 129 |
| Female | 134 |
| Total | 263 |

### LOCATION OF CANCER OF THE COLON

Why cancer should have a selected affinity for different locations in the colon is unknown. Why cancer should be multiple in the same patient is also unanswerable.

It is a fact that a simple rectal examination will disclose over 50 per cent of cancers affecting the colon. Curiously, many cancers are missed as a result of omission of this examination by the physician. On the other hand, the desire of the patient to hide symptoms may also result in delaying treatment. Notwithstanding the slower growth of cancer of the colon as compared with cancer in other parts of the body, delay may be prejudicial to the patient's ultimate recovery. Delay may result in extension of the cancer in continuity to adjacent organs. Delay may also result in metastases to other organs. In other words, the longer a cancer remains untreated, the greater will be the likelihood of an implant of cancer in distant organs, such as the liver, brain and spinal cord.

### SYMPTOMS ACCORDING TO LOCATION

There is considerable variability in the experience of surgeons as to the first symptom leading to a diagnosis of cancer of the colon. The initial symptom depends somewhat on the portion of the colon affected and on the length of time the cancer is resident in the colon. Some lay particular stress on a change in bowel movement, such as diarrhea. In fact, some observers believe that diarrhea is the first symptom. Diarrhea with alternating constipation is in my experience a late symptom. As I review the cases in which I have operated, a sense of pain and discomfort seems to have been the first symptom. Unfortunately, a surgeon does not see the patients at the inception of the symptoms. Bleeding from the rectum may be early or late; in my experience it has usually been late. The passage of mucus is also a late symptom.

When cancer attacks the cecum and the ascending colon, it is a common observation that secondary anemia follows. In 2 cases referred to me, a diagnosis of pernicious anemia had been made. At this stage, such a diagnosis is unpardonable, because a mass can usually be felt. To illustrate this fact again, I recently operated on a man whose diagnosis of carcinoma of the sigmoid colon was not made until six weeks before the operation. It is now known that this patient started to have symptoms two years ago. At operation I found a huge cancer of the colon and a pathologic anastomosis between the ileum and the colon. The growth was removed, and an end to end anastomosis was made between ileum and ileum and colon and colon.

With cancer in the region of the transverse colon, the symptoms and blood picture are somewhat the same. When the growth is in the splenic flexure, the symptoms are more secretive than with cancer in any other part of the colon. Cancer of the splenic flexure is also the most difficult form of cancer to detect, even with the aid of the x-rays. More tumors are missed in this area than in any other portion of the colon. As a matter of fact, it is perfectly justifiable to perform an abdominal section if symptoms persist in this area without any confirmatory evidence. Increasing constipation should make one suspicious of cancer in the descending colon. Here one encounters the ring-shaped constricting type of growth. In the cases of older people, especially women, who have suffered regularly from constipation, it may be extremely difficult to make a diagnosis from this symptom alone. The first symptom may be intestinal obstruction. There should be no reason at all for not recognizing a cancer in the rectosigmoid junction or the rectum. A digital examination will confirm the diagnosis suggested by symptoms causing a change in bowel habits in this area. A cancer of the rectum, for a distance of 4 to 6 inches (10 to 15 cm.) from the anus, can be felt if the patient is put in various positions—on the back, on the side and in the knee-chest posture. The proctoscope and the sigmoidoscope should always be used when the growth cannot be felt digitally. The advantage of locating a tumor low in the colon gives one the opportunity to obtain material for biopsy.

### ROENTGENOLOGIC DIAGNOSIS

Whenever a patient has vague intra-abdominal symptoms, one should suspect cancer. After a thorough physical examination, including palpation of the abdomen and a rectal examination, if nothing has been revealed, a roentgen

examination should be made. This examination is of great diagnostic value, especially when cancer is present in an area of the colon above the rectum. (The examination is of no practical value for revealing cancer below the rectosigmoid junction, because 95 per cent of cancers of the rectum can be felt with the finger.) The most difficult cancer to detect with the x-rays is that in the splenic flexure. Sometimes a lateral or oblique view will bring to light a cancer that has been missed several times in examinations made with the patient in the dorsal or prone position. With cancer in other areas of the colon, diagnosis by means of roentgenograms is comparatively easy.

Under this heading may also be considered the effects of x-rays and radium on cancer of the colon. There is no justification for their use when the lesion can be removed surgically. As a matter of fact, surgical removal may be used even when there are minor metastases in the liver. Roentgen rays and radium have practically no beneficial therapeutic effect on cancer of the colon. These agents have been used on growths in stages with questionable benefit.

### OPERATION

There are still too many patients being operated on for hemorrhoids who definitely have cancer of the colon. Just a few weeks ago, I operated on an elderly woman for cancer of the rectosigmoid junction. In addition, there was a contiguous implant on the uterus and bladder (figs. 1, 2 and 3). The patient had been operated on for hemorrhoids by a proctologist. While it may have been impossible to reach the tumor with a sigmoidoscope, still a careful analysis of the symptoms would have put the surgeon on the proper course. The history of this case is as follows:

C. K., a woman aged 65, was admitted to the medical department of the Jewish Hospital on September 1, 1944, and transferred to the surgical department on October 6.

At a previous admission, in April 1944, she was sent to the hospital by her family physician with a tentative diagnosis of cancer

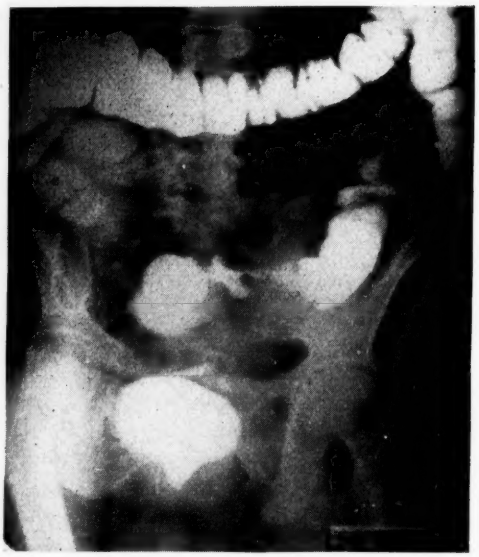

Fig. 1. C. K. was operated on for hemorrhoids three months before my operation. The roentgenogram shows a definite lesion (carcinoma) at the rectosigmoid junction.

of the colon. At this time she complained of pain in the abdomen and discharge of mucus and blood from the rectum. These symptoms were disregarded, and roentgenograms were not taken. She was then operated on for hemorrhoids, without relief of her symptoms.

When readmitted, on September 1, 1944, she said that the operation had not helped her, since she had had the same type of symptoms, namely tenesmus and bloody and mucous stools. About ten days previously she had begun to have difficulty with urination. She had pain originating around the iliac crests and radiating along the groin to the urethra. After urination, the sharp and cutting pain would subside.

On October 2, roentgenograms revealed

carcinoma of the lower end of the sigmoid flexure. Operation was performed on October 14. When the abdomen was opened, the tumor at the rectosigmoid junction was found adherent to the uterus and urinary bladder. The growth was separated from these organs. Hysterectomy was performed, followed by a plastic operation on the bladder and a one stage operation on the colon. This consisted of an immediate resection of the tumor and an end to end anastomosis.

The patient was discharged from the hospital on November 10.

*Pathologic Report.*—The main specimen consisted of 11 cm. of the large bowel. The entire length of the lumen was occupied by a polypoid hemorrhagic mass arising in the mucosa. Areas of degeneration were noted. There was gross evidence of infiltration into and through all coats of the intestine. A specimen of uterus and ovary showed an area of ulceration and necrosis 4 cm. in diameter in the fundus; this extended almost to the endometrial cavity. The remainder of the uterus showed no abnormality. The ovary was firm and fibrotic. The tube was normal. There was also a small portion of the wall of the bladder showing areas of ulceration and replacement by necrotic fungating tissue.

Microscopic examination of a section of the tissue showed a number of abnormal epithelial cells having a papillary arrangement. The tumor cells were well differentiated. The nuclei were hyperchromatic. Considerable necrosis and polymorphonuclear cells were present. There was infiltration of the stroma by neoplastic cells. A section of ovary showed a number of atrophic follicles. The stroma was composed of fibrous tissue. A section of uterus showed infiltration by carcinoma cells. The myometrium was composed of bundles of involuntary muscle.

The diagnosis was papillary carcinoma of the sigmoid flexure (grade II malignancy) with infiltration of the uterus and uterovesical fold.

## COLOSTOMY

Colostomy is not done as a preliminary operation as frequently as it used to be. If the Wangensteen or the Miller-Abbott tube is successful in decompressing the gastrointestinal tract, then, after the use of succinylsulfathiazole, the patient may be properly prepared for a one stage operation. In the use of decompression by such means, one should be cautious not to prolong the treatment too long, because when the indication presents itself a colostomy is a life-saving measure.

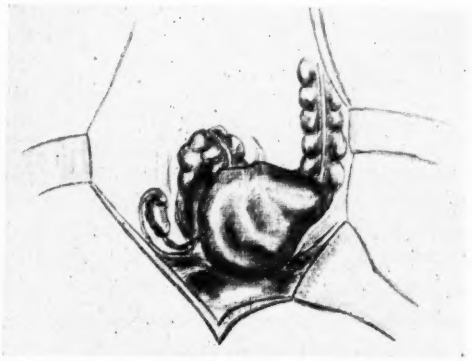

Fig. 2 (C.K.). Carcinoma of the rectosigmoid junction in situ, attached to the uterus and urinary bladder.

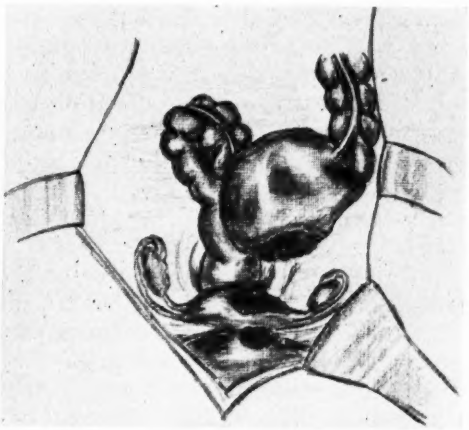

Fig. 3 (C. K.). The lesion separated from the uterus and bladder.

ONE STAGE VERSUS TWO STAGE OPERATION

For many years the Mikulicz operation, performed in several succeeding stages, was the procedure of vogue, whenever and wherever it could be performed. The results were good because, unquestionably, this is the safest method that one can use in operations for cancer of the colon, but the length of time, the uncleanliness between the stages and the hospitalization did not redound to the credit of this operation. With the use of succinylsulfathiazole, surgery of the colon, and of the rest of the intestinal tract, has been revolutionized. Take for instance the case already referred to. Here was a woman 65 years of age who would probably have been regarded as inoperable on the basis of the former methods of preoperative preparation. The danger in separation of the lesion of the colon from the uterus and the bladder was that a perforation might occur. But with the use of succinylsulfathiazole it did not matter if it occurred, because at the time the anastomosis was made the colon was practically empty. A little mucus was seen and no feces. Even if a perforation had occurred, the spilling contents would have been almost inert (according to the results of the bacteriologic studies which have been made concerning this drug and its use in colonic surgery). I could give many more instances of the beneficial uses of this drug, but let me refer the reader instead to other papers written on the subject and to be published in the future.

A one stage is preferable to a two stage procedure whenever one operates on the gastrointestinal tract. This is exemplified in operations for cancer of the head of the pancreas, for cancer of the cecum and ascending colon and for the correction of a gastrocolojejunal fistula. In the latter two instances, succinylsulfathiazole has permitted a change from a multiple operation to a single stage procedure. It seems unwise and unjust to the patient to subject him to a Mikulicz type of operation for cancer of the cecum or ascending colon. Here, with a fistulous tract from the ileum, the excoriation of the skin that results from the bowel contents should alone militate against the many stage operation. Again, the mass of adhesions that results between the first and the second stage operation is sometimes insurmountable in this area. The convalescence of the patient following a one stage operation is patently superior to that with a multiple stage procedure. After the one stage operation, the patient may leave the hospital in from ten days to two weeks, while with the multiple stage operation he may be hospitalized from six to eight weeks. In fact, the longest recorded period of hospitalization following the multiple stage operation was seventy-five days, whereas the shortest time of hospitalization following the one stage operation was ten days.

A one stage abdominoperineal operation is preferable now to a two stage Rankin or Lahey operation. In the one stage operation, the surgeon is working in "virgin soil," which enables him to remove the lesion in one sitting, whereas if the operation were done in two stages adhesions would render the operation much more dangerous. The convalescent period after a one stage operation is in marked contrast to two convalescent periods following a two stage operation. Furthermore, the knowledge that the patient must go through two operations is not pleasant. Another potent reason, aside from the mechanical difficulties, is that a one stage operation, when it can be performed, is always superior to any two stage procedure.

### POSTOPERATIVE PERMANENT COLOSTOMY

There is among a group of physicians a strong psychologic factor which fairly often prevents the patient from receiving the proper remedial operation for cancer of the colon, especially when it attacks the rectum. I am cognizant of the fact that operations have been devised which preserve the sphincter. There are circumstances, however, in which these operations cannot be applied. It is then necessary to do the Miles one stage abdominoperineal operation. This naturally leaves the patient with a permanent colostomy. A permanent colostomy is not the inconvenience that one pictures in his mind. There are many patients who wear no receptacle at all and who can control their bowel movements to one a day. With attention to the diet and the formation of a one-movement-a-day habit, the colostomy is easily controlled. There are some patients who eat everything and, in addition, have made no change in their normal life. Most of the patients with a permanent colostomy have returned to their former occupations.

### POSTOPERATIVE TREATMENT

Before any major abdominal operation, a Levine tube should be passed. After the operation the Wangensteen suction is utilized. A careful daily estimate of intake and output should be recorded. The fluids must be balanced, particularly after the operation. To do this, my associates and I employ, intravenously, dextrose in distilled water or saline solution, depending on the state of the kidneys. Lactate-Ringer (Hartmann's) solution is used when there is a deficiency of lactates, and isotonic solution of three chlorides U.S.P. (Ringer's solution) is of particular value in some instances. Five hundred cubic centimeters of blood or plasma is always ready in the operating room. After the operation we give as many transfusions as are essential. Amino acids, plasma, blood and red blood cells are used routinely for the purpose of preventing hypoproteinemia. Amino acids, plasma and red blood cells are especially helpful for the occasional patient who does not tolerate blood transfusions. Another aid is the intravenous use of red blood cells remaining after the plasma has been withdrawn. There is less likelihood of reactions following their use. For many patients with cancer of the colon, the administration of thiamine (vitamin $B_1$) is important. The indication for administering this vitamin is the presence of the red beefy tongue, so commonly seen in patients with disease of the colon. The treatment of complications is also important after the operation. Where as formerly infection was the rule, with the use of succinylsulfathiazole this has been rendered practically a nonentity. Infection still occurs after operations on the colon, but the massive necrosis of wounds has practically ceased with the use of this sulfonamide compound. After the many stage Mikulicz operation, there was always more or less infection, as a result of the soiling of the wound by feces. The marvel of it all is that more patients did not die from massive infection as a result of this operation. Peritonitis following a colon operation is now practically unknown. One must always be on the lookout for pneumonia, on account of the age of most of the patients operated on. Atelectasis is a fairly common complication. A bronchoscopist or an anesthetist conversant with the bronchoscope should always be on the alert. Other complications are treated as they arise.

### ANESTHESIA

In performing operations on the colon the continuous or fractional method of administering spinal anesthesia has been used in almost every case. With the continuous method one is sure of a prolonged anesthesia, and in some of these operations on the colon much time must be consumed. Five hundred milligrams of procaine hydrochloride is dissolved by the spinal fluid, after which the technic as proposed by Lemmon is followed.

### MORTALITY

From 70 per cent to 80 per cent twenty-five or thirty years ago, the mortality has now been reduced to about 5 per cent. In some clinics it is around 2 per cent. No small contribution to this change in mortality is a better understanding of the preoperative preparation of the patients. No patient with cancer of the colon should be operated on without at least a week's preparation, and sometimes ten days is even better than a week. This has been fully discussed in the early part of this paper. The technic of performing a resection with end to end anastomosis has been much improved. Closure is now made in many cases without intraperitoneal drainage. This has contributed in no small measure to the reduction of mortality.

### CONCLUSIONS

1. In the preoperative preparation of patients with cancer of the colon, attention must be given especially to the chemical balance.

2. Succinylsulfathiazole (sulfasuxidine) plays a most important role prior to the operation.

3. Careful attention to the symptoms will frequently enable the patient to be sent to the surgeon for operation before the growth reaches a late stage.

4. In the final diagnosis, proctoscopy, sigmoidoscopy and roentgen examination will be of great assistance.

5. A patient should not be sent to the surgeon for a hemorrhoidectomy without a thorough local examination.

6. The one stage operation is far superior to the two stage operation, for the reasons which have been given.

7. Before and after operation, the internist and the surgeon, as a team, are of inestimable value. It is important in these stages to counteract and prevent hypoproteinemia.

8. Continuous or fractional spinal anesthesia is the method of choice.

9. There should be no dissent on the part of the physician concerning a permanent colostomy. Lives have been prolonged by permanent colostomy, and patients have again been made useful citizens.

10. As a result of the improvement in preoperative and postoperative management, especially with succinylsulfathiazole and an improved technic, the mortality of 70 or 80 per cent of more than a generation ago has been reduced to about 2 per cent.

### REFERENCES

Behrend, M.: Succinylsulfathiazole (Sulfasuxidine) and the Elimination of the Mikulicz Operation, Surg. Clin. North America *24*:238–247 (Feb.) 1944.

Poth, E. J.: Succinylsulfathiazole: Adjuvant in Surgery of the Large Bowel, J. A. M. A. *120*:265–259 (Sept. 26) 1942.

———— and Knotts, F. L.: Succinylsulphathiazole, a New Bacteriostatic Agent Locally Active in the Gastrointestinal Tract, Proc. Soc. Exper. Biol. & Med., Oct. 1941, pp. 129–130.

### SUMARIO

1. En la preparación preoperatoria de pacientes con cancer del colón, especial atención debe darse al balance químico.

2. Succinilsulfatiazol (sulfasuxidine) produce efectos muy benéficos antes de la operación.

3. La interpretación correcta de los sintomas precozmente pondrá el en-

fermo en los manos del cirujano antes de que el tumor sea inoperable.

4. En el diagnostico final, protoscopía, sigmoidoscopía y radiografía sirven de utilidad y asistencia.

5. El enfermo no debe ser enviado al cirujano para una hemorroidectomìa sin someterle a un examen local.

6. La operación de un solo período es más ventajosa que la operación en dos períodos por razones que ya han sido expuestas.

7. Es de importancia la colaboración del internista y del cirujano en las curas preoperativas y postoperativas.

8. La raquinanalgésia continua o fraccionada es el método de elección.

9. El médico de cabecera no debe oponerse a la colostomía permanente, pues esta implica en muchas ocasiones la salvación del enfermo y le permite llevar una vida normal.

10. Como resultado de los adelantos hechos en el manejo de estos casos antes y después de la intervención quirúrgica, especialmente con el uso del succinilsulfatiazol y la técnica moderna, la mortalidad que fué de 70 a 80 por ciento hace una generación, ha sido reducida a 2 por ciento aproximadamente.

RÉSUMÉ

1. Dans la préparation préopérative du malade avec cancer du colon, il importe de faire très attention à la balance chimique.

2. Le succinylsulfathiazole (sulfasuxidine) joue un rôle très important dans la préparation du malade pour l'opération.

3. L'analyse minutieuse des symptômes dont se plaint le malade permet les opérations précoces.

4. Pour le diagnostic définitif, la proctoscopie, la sigmoidoscopie et les rayons X sont d'une grande utilité.

5. Un examen minutieux doit être pratiqué dans les cas d'hémorrhoides.

6. L'opération en un temps est préférable à l'opération en deux temps, pour les raisons que nous avons avancées.

7. Avant et après l'opération, la coopération de l'internist et du chirurgien est d'une valeur inestimable. Il importe de prévenir et de combatre l'hypoproteïnémie.

8. L'anesthésie spinal continué ou fractionnée est la méthode de choix dans ce domaine.

9. La vie a été prolongée par la colostomie permanente, et les malades ont pu reprendre et mener une vie active et normale.

10. Vu les améliorations apportées dans les soins préopératoires et postopératoires de ces malades, l'emploi de succinylsulfathiazole et les perfectionnements apportés à la technique opératoire, la mortalité de 70 pour cent a 80 pour cent de la génération passée a été réduite à 2 pour cent.

СВОД

1. При до-операционной подготовке больного с раком большой кишки, необходимо обратить особенное внимание на химическое равновесие.

2. Суксинил-сульфа-тиадол (сульфасуксидин) играет важную роль до операции.

3. Внимательное отношение к симптомам часто дает возможность послать больного к хирургу до того, как опухоль достигает последнюю стадию.

4. Проктоскопия, сигмоидоскопия и рэнтгеновское исследование очень полезны в постановке заключительного диагноза.

5. Без точного местного исследования не следует посылать больного к хирургу для гемороидектомии.

6. На основании вышеданных одностажная операция гораздо лучше, чем двухстажная.

*(Continued on page 260)*

# "Hernias of the Pelvic Floor" versus "Prolapse of the Uterus or/and Rectum"

## A Problem of Nomenclature, Pathology and Treatment

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I AM not certain when weakness of the abdominal wall and visceral protrusion in the caudal region began to receive a different nomenclature than that accorded to all other escapes through the abdominal wall. Certain it is that the use of the terms "prolapse" and "procidentia" for visceral protrusions and extra-abdominal wandering in the region of the pelvic floor are of ancient origin. While defects in the abdominal wall and visceral escape have been recognized as herniation and a sound treatment applied in the cephalad, ventrad, laterad and dorsad portions of the abdominal wall, the same conditions in the caudal wall are given the meaningless and misleading terms "prolapse" and "procidentia." This has led to surgical and nonsurgical attention being given to the viscera instead of adequate recognition and surgical correction and nonsurgical aid being properly directed to the abdominal wall as well. There now remains no question among those who have studied the problem that the tardiness of recognition of the hernial nature of visceral escape in this region has been due to lack of liaison between anatomic research and surgical application.

Sappey said that "the levator ani is one of those muscles which has been studied the most and at the same time, one about which we know the least." There are many reasons for this, one of which is the change to the upright position and the environmental changes in tail muscles to meet the greater need of supporting structures. Again, the implication of minimized conception of the function of the muscle by the name "levator ani." While the muscle is to a certain extent a lifter of the anus, that is an inadequate term. It is a lifter of all attached structures—the rectum, the vagina, the urethra, the bladder and indirectly the supporter of all superimposed viscera, and it is also a sphincter recti muscle and a vaginal constrictor.

The question is often raised as to which portion of tissue is most important—the muscular or the fascial. It would appear of great importance that the three layers of muscles and five layers of fascia are so woven together as to make them almost inseparable; this implies perhaps that one is not to be set against the other, but that their functions are to be performed in unison.

Again, the study of the pelvic floor has been difficult because of designations of relative positions, such as anterior and posterior, superior and inferior, superficial and deep. The fact that these terms were originated as of the standing position while the subject is studied in the reclining position makes the application of the terms to the changed position difficult. Students

have confessed to a more ready understanding by use of the scientific terms cephalad, ventrad, dorsad, laterad and caudad, which have the same significance with all positions. It has also helped many to realize the caudad portion to be on a par with the rest of the abdominal wall; this is not brought out by such terms as levator ani muscles and pelvic floor or even lower abdominal wall. It has been difficult for many to realize that the pelvic floor is anything

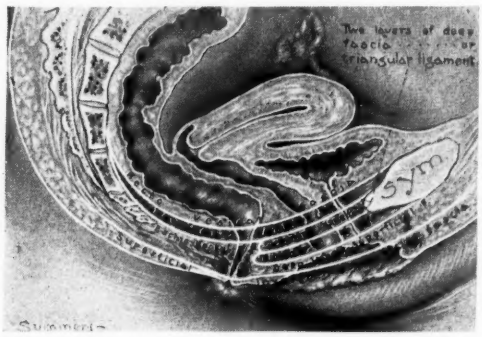


Fig. 1. Diagrammatic drawing of the caudal end of the abdominal wall, showing the pelvic floor with five layers of fascia and three layers of muscle covered with the skin. The rectum, vagina and urethra are seen passing through the pelvic floor. The lower abdominal organs, the uterus, bladder, vagina and rectum, lie above the pelvic floor.

other than an open structure from which pelvic organs can descend or prolapse.

It is difficult to accept the fact of herniation unless one is able to accept the caudal wall on the same basis as the ventral wall, as an enclosing structure which is subject to hernias as is the anterior abdominal wall but is more frequently affected by reason of the low position and the openings in the wall for the passage of the terminal ends of tracts, and by childbirth through the caudal wall, with frequent damage. If one visualizes a real abdominal wall in the caudal region, it is untenable to accept the prolapse theory, for the normal position of the viscera is distinctly above this wall and their protrusion brings them below this structure by their passing through openings in this wall. Thus such protrusion conforms to every requirement for a hernia. A distinct abdominal wall; the normal position of viscera inside the abdomen and above this wall; the acquired position below this wall by

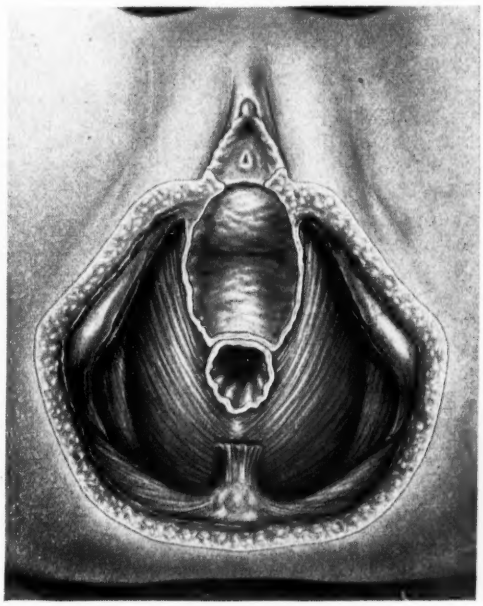

Fig. 2. Soft parts cut away down to the levator ani muscle, showing childbirth injury to the pelvic floor with wide separations of the muscles and herniation of the bladder and rectum. The uterus may be expected to follow. Muscles on each side show good structure for rebuilding the pelvic floor.

passing through the pelvic floor—to a thinking person these should be conconvincing. It is not controversial; it is absolute and demonstrable. The method of treatment may be controversial, but this can best be standardized when once the pathologic condition is accepted as according to fact.

The acceptance of the phenomenon on a false basis of wrong precedent does

not at all offer a good reason to continue the error. Anatomists are aware of the existence of muscles and fasciae which constitute the efficient caudad wall; they know the relation of the viscera to this wall before and after its impairment. Gynecologists and proctologists should appropriate this anatomic knowledge and adapt it to the prevention and cure of hernias of the pelvic floor.

Decades of time were lost in failure to recognize the pelvic floor as an adequate support and in trying to invent mythical supports such as "atmospheric pressure," "negative abdominal pressure," "retentive power of the abdomen" and "intra-abdominal pressure." Some of these have not yet been discarded, as is evidenced by the frequent use of intra-abdominal pressure to support organs. Even such vague and helpless aids as "atmospheric pressure" and "retentive power of the abdomen" are called upon by some recent writers to do what they seem to think that the pelvic floor and the visceral ligaments cannot do. One should never fail to keep in mind that the problem is one of adbominal organs with weight to be carried, and abdominal walls and ligaments to carry this weight.

An equally faulty conception is that a "prolapse" of structures which are supposed to have drifted downward and forward justifies the use of the term "prolapse" without any consideration of the pelvic floor. Gynecologists, who long ago should have rid themselves of the prolapse theory, have set a bad example to veterinarians and proctologists by terming a hernia of the pelvic floor a prolapse, although instead of its being downward and forward it is upward and backward in the case of four-footed animals. The veterinarian rightfully terms umbilical protrusions "hernias," in spite of the distinctly downward course of the protrusion, showing that downward direction has

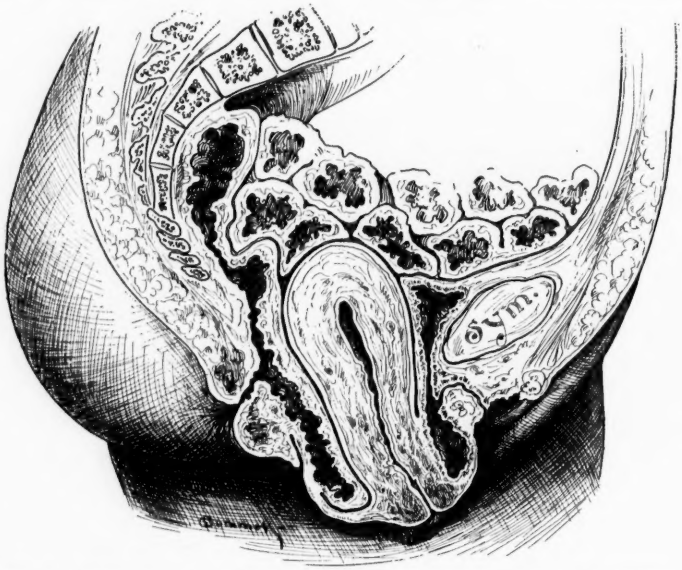


Fig. 3. Injury to the pelvic floor with adjacent structures of the vagina, uterus, bladder and rectum. Culdesac herniating through the pelvic floor.

no bearing on the question. Proctologists are still following the example of the gynecologists in calling protrusions through the posterior pelvic floor slit "rectal prolapse," leaving out consideration of the impaired supporting structure as one important factor in the herniation, just as gynecologists stick to the term "prolapse of the uterus" to apply to a widely distributed herniation of bladder, vagina, rectum, etc., which may or may not include the

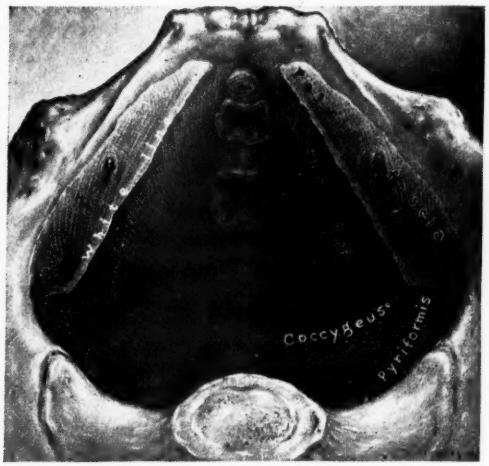


Fig. 4. Pelvic floor shown intact from above, with complete closure except openings for the passage of the vagina, rectum and urethra.

uterus. Whether it does or not, "prolapse of the uterus" is a term of antiquity which did not at all consider the importance of the pelvic floor or the extent of the pathologic process.

The early skin–mucous membrane operations for prolapse of the uterus were mostly efforts to cover up genital conditions which the conception of prolapse of the uterus could not correct. Slowly, empirically, the skin–mucous membrane butterfly flap, non-pelvic-floor operations grew a little deeper and resulted in an effort to narrow the vagina or put a perineal body between the vagina and rectum. Often this so-called body started in the labia majora and ceased before it reached the remains of the hymen. Slowly, empirically, blindly, perineal operations began to dip down and in some later stages began to utilize separated structures to discourage the downward trend of the prolapsing uterus. Slowly some surgeons began to recognize the importance of depth of the wound, realizing that injury to the pelvic floor might and often did involve all layers of structure, but they denied the possibility of picking up these layers as a hernial repair.

In spite of Goldspahn's claim that the muscles could not be identified after their years of disuse, Harris found them, and operated on them by taking out a transverse inch of each side of the levator ani muscle. His experience should have been a warning against transverse, or oblique, episiotomy, but this was forgotten before the enthusiasts for a quick and easy delivery had discovered that practically every woman "had" to have an "episiotomy," which means an operation on the vulva.

I tried the Harris operation and found it too mutilating, but I discovered that by raising the posterior vaginal wall the muscle could be picked up and brought together in the median line. This was the basis of a hernioplastic repair of the pelvic floor. From that time, a protrusion of the bladder, rectum, vagina or uterus was to me a herniation through the pelvic floor and the method of treatment was a hernioplastic repair, which in many cases is simple and in many cases is complicated. In 1908 I presented the subject of "Hernias Through the Pelvic Floor" to the Chicago Gynecological Society and showed hernioplastic measures for their relief. In 1912 Montgomery read a paper before the same society entitled "Hernia

Through the Pelvic Floor," in which he quoted my pelvic floor operation and also Tandler and Halban's work. Dr. Montgomery's work showed some insight into the nature of hernia of this region, but it did not completely avoid the evils of "prolapse" of ancient vintage.

In 1915, Charles Mayo in writing on "Prolapse of the Uterus" incidentally remarked that such conditions were

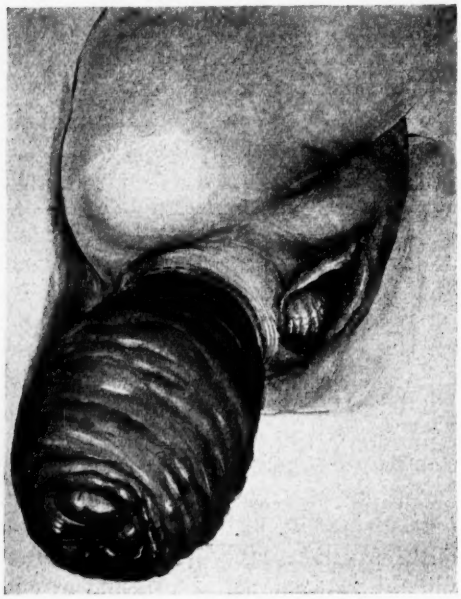

Fig. 5. Herniation of the rectum the size of a coconut. There was also a rectocele, which was greatly increased in size when the herniating mass was replaced. The dotted line shows an incision just inside of the sphincter for removal of the herniating bowel.

"really hernias," but he did not deal with them as such. Sturmdorf in 1919 mentioned the faint resemblance of this process to a hernia, but gave nothing constructive. Jeff Miller in 1932 took a definite stand, that cystocele, rectocele and colpocele were hernias, but in his writings these terms are a little confused with prolapse. Numerous writers have been able to recognize as hernias escapes of the uterus through the inguinal ring, the umbilical ring and a ventral operative ring, but vision fails when the bladder, vagina, uterus and rectum herniate through the pelvic floor rings.

I have come to believe, after studying all phases of the pelvic floor, that the understanding of the construction of the pelvic floor, the recognition of impairment, primary and secondary, and the full reconstruction create an engineering problem.

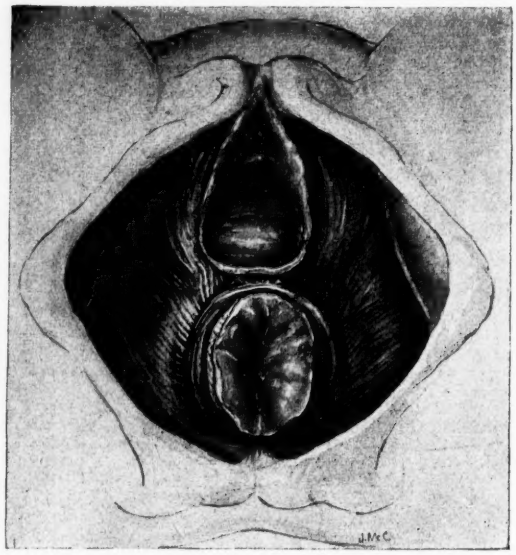

Fig. 6. Soft parts cut away to expose the condition of the sphincter and the lower part of the bowel after the removal of the herniation.

I must confess that as I presented the aforementioned paper on hernias I harbored a thought that this might slowly, very slowly, win a few thoughtful minds away from the dwarfing conception of "prolapse of the uterus" to the more scientific conception that when there is a cystocele, a rectocele, a colpocele, a urethrocele and perhaps an enterocele (all hernial terms), the combined mass of viscera leaving the abdomen to dwell outside the abdomen or wander between

the patient's legs, the observer would not be satisfied with an operation for "prolapse of the uterus" (or the more objectionable term "procidentia uteri") and the physician would therefore admit the more scientific conception of hernia below the caudal wall of all the structures which in normal condition dwelt above this wall in the abdomen. So far, with the aforementioned exceptions, there has been halting, stumbling progress, based on an erroneous conception of pathology. Some of the procedures that have been introduced appear to be

Fig. 7. Herniation of the bowel, uterus, bladder and culdesac in front and 11 to 12 inches (28 to 30 cm.) of protrusion from the rectum and sigmoid. (From V. K. Allen: Tr. Am. Proct. Soc., to be published.)

efforts to hide the uterus from all who should know its whereabouts. One of the worst of these is the Le Fort operation, which does not even undertake to offer a supporting structure and puts the responsibility upon two of the most movable structures, the bladder and the rectum, to the detriment of both.

Then there is the Watkins-Wertheim procedure. Too bad that two such good men's names ever became associated with such a pathologic procedure! It buries the uterus in a herniated position, and as a support for the bladder it does not offer the least rationale to justify its extreme result.

A wide use has been made of hysterectomy without correcting other pathologic conditions than the uterine and without even attaching the ligaments to the vagina. Naturally, letting the operation correspond to the conception of the pathologic process, removal of the uterus eliminates "uterine prolapse,"

Fig. 8. Well developed herniation of the uterus, vagina, bladder and rectum, with the projecting abdomen for carrying a part of the abdominal viscera. A sagging epigastrium from the downward pull of the hernia is also to be noted.

but the abnormal conditions overlooked become several times worse with prolapse of the bladder. The general surgeon is fond of doing an abdominal hysterectomy without rebuilding of the pelvic floor, which is equivalent to doing a suspension or removal of the gallbladder and failing to close the hernial opening, if the gallbladder had become part of the umbilical hernial contents.

Now surgeons are asked to reconsider

the tinkering operation of Spalding and Richardson—removal of the cervix, a supracervical hysterectomy, reaming out of the tube of cervix that is left and then use of this stump to take the place of the uterine body in an aborted Watkins-Wertheim operation. One is led to exclaim, "Well, make up your mind!" This is but a partial list of the makeshifts.

To make a long story less long, *it is a hernia* that is under consideration.

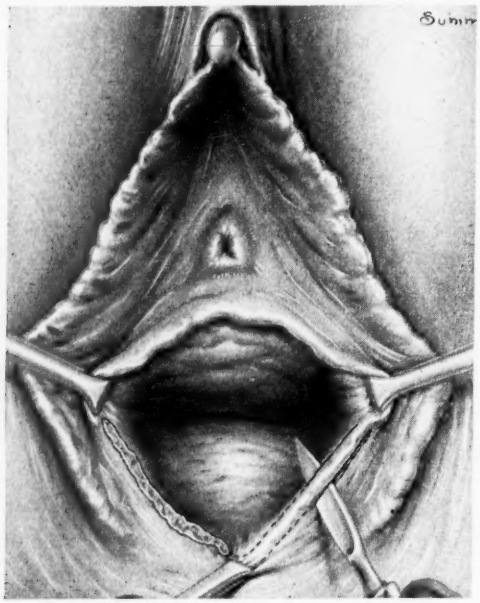

Fig. 9. Beginning of an operation to repair an injured pelvic floor which is resulting in herniation. The herniation of the bladder shown here was previously repaired at the same site.

What a lot of unscientific claptrap could have been avoided if this had been recognized even a short fifty years ago. It would have kept Thiersch from putting a silver wire around the rectum for so-called rectal prolapse. It would have shown that rectal and genital herniations are very much interrelated.

Textbooks abound in references to uterine prolapse, but no mention is made of structures' coming through the pelvic floor cleft as hernias. The references to the relation of rectal protrusion to defective pelvic floor support have been slight. In Vittel, France, in 1918 I did a hernioplastic operation on a 3 inch (7.5 cm.) herniation of the rectum in a male.

Moschcovitz spoke of herniation of the posterior peritoneal sac as the cause of rectal prolapse and recommended abdominal obliteration of the culdesac and sigmoidopexy for the repair of the prolapse. In his reference to her-

Fig. 10. Extensive herniation of the vagina, bladder and rectum with beginnings of an operation for vaginal hysterectomy and repair.

nia he was speaking of the peritoneal involvement.

Early in 1942 I presented before the Chicago, St. Louis and Kansas City gynecologic societies a paper on "Combined Herniations of the Genital and Rectal Structures," with a hernioplastic intrasphincterian operation for the cure of rectal herniation. Cohn and Graham have each presented operations for the cure of rectal prolapse, referring to the

hernial nature of prolapses. V. Allen has just presented a paper before the American Proctological Society upon "Rectal Herniation with Intra-sphincterian, Hernioplastic Operation" and reported interesting cases, one of combined rectal, uterine and bladder herniation, and all of extensive involvement, in which he followed the technic which I had reported. I was honored in being asked to discuss this paper and present

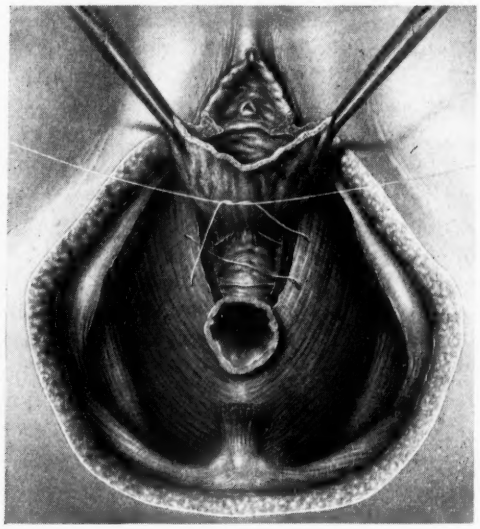

Fig. 11. Soft parts cut away and the vaginal wall lifted from the rectal wall with sutures placed in the edges of the fascia and muscle of the pelvic floor for hernioplastic operation.

my views on the hernial nature of this and all protrusions through the abdominal wall.

It is apparent that herniation of the rectum is being recognized more frequently, while gynecologists are adhering to the old notion of "prolapse of the uterus." Yet this also is a hernia through the pelvic floor and will come to be so recognized.

It is even now not uncommon to see the pelvic floor by-passed as being of no importance whatever in the management of prolapse, while the treatment of hernias must recognize this structure to be of utmost importance. As a hernia, the condition divests itself of the mystery and uncertainty which has surrounded it when it was considered as prolapse. Etiologically and surgically, two important structures present themselves for consideration: (1) the ab-

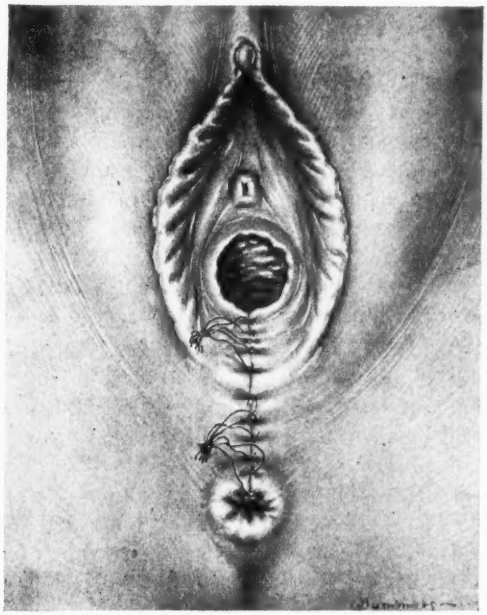

Fig. 12. Completion of the repair in a case of complete tear. With an incomplete tear only the forward half of the suture line would be present.

dominal wall, which should be intact but which becomes impaired and permits abdominal viscera to pass through; (2) the abdominal structures which find the openings in the wall and pass to the outside of the abdomen.

In considering the abdominal wall one must recognize the fact that impairment leading to herniation is usually due to injury during childbirth and stretching of the tissues of the wall, to increased intra-abdominal pressure or a fall, etc., or to one of the many conditions which favor hernial development in other re-

gions. Traumas from other sources, the surgical injury of episiotomy, congenital defects, degeneration of tissues and faulty innervation play a part. The condition of the lower abdominal wall may allow only a moderate herniation of the bladder, rectum and lower part of the vagina, or it may eventually allow the passage of extensive portions of the bladder, urethra, vagina, uterus, rectum, anterior and posterior culdesac, ureters, blood vessels and perhaps other adjacent viscera. Even in extensive abdominal wall (pelvic floor) separation permitting the condition termed by Barry Hart "pubococcygeal herniation," there is frequently good structure of the pelvic floor, so that only the proper approximation is necessary to achieve good hernioplastic repair.

With regard to the escaping viscera, let it be remembered that they may herniate very little or not at all at first, and that they may continue in good position and in excellent health for some time. On the other hand, weakened ligaments, softened heavy tissues and an active, hard life may cause herniation to progress rapidly. These structures may have undergone considerable pathologic change before making their escape, but with the onset of herniation the hernial ring constricts, pinches the tissues and strangulates the blood supply. The rectal and urinary currents are obstructed, and the mucous membranes become exposed to trauma and infection and frequently undergo ulceration and even gangrene, so that pathologic changes readily develop in addition to those which the organs have previously acquired.

The pelvic floor is usually amenable to restoration to usefulness. The herniating structures and the caudal wall must be subject to a careful engineering analysis. The herniated structures must be returned to the abdomen or be removed. As the uterus, tubes and ovaries, with such pathologic changes as they may carry, are the only structures which are ordinarily removable, all others are to be replaced and the best possible measures carried out to hold them in position. This should not exclude occasional removal of parts of the bladder.

The uterus can usually be saved unless its pathologic involvement warrants or demands its removal. If it is beyond the age of usefulness, it may be taken out on a smaller pathologic consideration. The following questions should be answered:

1. Is the uterus healthy?

2. Is the uterus needed for childbearing?

3. Is the patient in, near or past the menopause?

4. Does the uterus contain such uncorrectable pathologic changes as to warrant its removal at any age?

5. If the uterus is to be retained, will the patient's condition be improved by an amputation of the cervix or/and a curettage? There is often much to be accomplished in lightening the load in removing diseased tissue and in preventing the easy slide of the cervix in loosened connective tissue.

6. Is the retention of the uterus sufficiently desirable to warrant the removal of a fibroid? Usually not in cases of long-standing herniation.

7. If the uterus is to be retained, every effort should be made to leave it in a normal, uncramped position.

8. As visceral support is to be obtained not only by continuity of the pelvic floor but, by reason of the openings left, by the restoration of the normal relations of the uterus and vagina, the vagina should be left in an oblique position, running from the introitus backward and upward close to the hol-

low of the sacrum, and the uterus should be left in the horizontal position, with fundus forward and cervix backward—this oblique and right angle course being a part of the principle of pelvic floor support. Sometimes this is sufficiently accomplished by directing the fundus forward by the round ligament operation (reported in *Surgery, Gynecology and Obstetrics* in 1905), which carries the anterior layer of the broad ligament with it.

Sometimes it is desirable to direct the cervix and vagina backward by shortening of the sacrouterine ligament or by the Alexandroff or Dudley operation of putting the cardinal ligament in front of the cervix, as practiced later in Manchester with a more extensive amputation.

Veenboer, in an as yet unpublished paper, recommends using the much elongated sacrouterine ligaments by carrying them forward below the pubocervical fascia and attaching them to the arcuate ligament, using them to reinforce the pubocervical fascia in supporting the bladder and sewing them to the upper end of the vagina to hold it backward. This would seem to offer some merit in cases of extended herniation.

I have not been impressed over the years with undesirability of maintaining the uterus in the horizontal position or with inability of the round ligaments to render valuable aid. These measures are hardly worth while in cases of extensive herniations of elderly patients with considerable uterine involvement, but in cases in which uterine function is desired many patients have been left childbearing and physiologic menstruation has been conserved for the normal period. Occasionally it has seemed worth while to preserve the latter function by doing a defundectomy for fibroids.

If removal of the uterus is counted desirable, attachment of the vagina to the supporting structures should be insured. The needs of the herniated visceral structures should be accomplished by adequate narrowing of the expanded vaginal and bladder walls; the vesicle and vaginal fasciae should be sufficiently narrowed, and the loosened visceral terminals should be adequately reunited to the pelvic floor structures, especially around the rectum.

In the rebuilding of the pelvic floor, the injured pelvic floor should be reached by raising the vaginal flap well above the pelvic floor muscles and fasciae. The rectal fasciae should be narrowed, and the separated pelvic floor muscles and fasciae should be brought together extensively enough to close the hernial opening, leaving a sufficient pelvic floor opening to allow passage of the vaginal tract and going back far enough to insure a good grasp of the rectum by the pubo rectalis, or so-called sphincter recti, muscle. If the sphincter ani muscle and the rectovaginal septum are not intact, they should receive rebuilding. If the sphincter muscles are still partially intact but considerably stretched, the sphincter may be drawn forward and two or three sutures placed so as to lessen the size of the sphincter. There may be such lack of intactness of the pelvic floor posterior to the rectum as to make an opening posterior to the rectum desirable for this repair, but usually good closure of the pelvic floor cleft in the hernioplastic operation remedies this defect.

Occasionally extensive rectal herniation may accompany the marked herniation through the genital cleft. The rectum may herniate a few inches to several feet. This combined involvement may present an important problem of pelvic floor engineering, as to whether

the two conditions should be dealt with separately or at the same time, and, if separately, which is the most urgent. In instances of extensive rectal herniation with genital herniation it seems best at times to do the rectal hernioplasty first, but in a case reported by V. Allen the herniated bladder was operated on first, for a quantity of stones, and the extensively herniated rectum was operated on ten days later, by the intrasphincterian hernioplasty which I had reported (in the *American Journal of Surgery*).

The intrasphincterian hernioplasty begins with a severing of the lower end of the bowel from the skin just inside of the sphincter ani; the bowel is then drawn down, and the pelvic floor is sutured through the greatly dilated sphincter. The greatly enlarged pelvic floor opening is lessened in size by placing two or three sutures in the borders of this opening anterior and posterior to the rectum, after which two or three sutures are placed in the skin and sphincter anterior and posterior to the bowel, bringing the new anal opening down to a normal size. A great advantage is gained by doing this procedure while the hernia is still small. In Allen's case it extended out 11 inches (28 cm.), making 22 inches (55 cm.) of herniated bowel. The hernias in some of my cases have been more remarkable for size than length, the largest being about the size and shape of a coconut. These conditions, whether simple or complicated, are true herniations and should be dealt with as such. Every step toward hernioplastic repair should be a step toward normalcy instead of an abnormal hiding or malplacement of the uterus or its remnants.

I was once asked how I should deal with a certain very large "prolapse" of the uterus, the mass containing the bladder full of stones, the uterus, posterior to that a large rectocele, and an enlarged culdesac of Douglas, in which intestinal loops could be palpated. Could any one fail to recognize this as a hernia? The covering of the herniated mass was the vaginal wall, dusky red, edematous, tender, ulcerated, excoriated, inflamed. The whole mass was perhaps the size of a 2 year old child's head, and of course one should visualize in the mass kinked and obstructed ureters, with hydroureters and hydronephrosis, and perhaps with these contents mixed with pus.

My reply: "I should proceed just as I should with a like-sized hernia in the umbilical region, with special attention to this region."

Much can be done to improve the condition of the poor risk patient. The local conditions should receive attention. Infections and ulceration should be cleared up. A recumbent posture, a tampon and a tight pad will hold the uterus inside; circulation will be improved and edema will be eliminated, and the tissue will rapidly acquire greater resistance. Cardiac, renal and pulmonary embarrassment should be overcome; anemia should receive consideration; administration of blood plasma and fluids, with dextrose solution, may be desirable. For poor risk patients with some sepsis, sulfathiazole and penicillin will be a worthy crutch. Familiarity with the anatomy and surgery of the region helps greatly in serious cases.

## CONCLUSIONS

This paper is intended to emphasize the hernial nature of all protrusions through the caudal wall of the abdomen, as of protrusions in all other walls. The hernia presents these main points:

1. Impairment of the pelvic floor exists.

2. The herniated structures have undergone pathologic change.

3. There is disunion of the normal attachments between the supporting structures and the structures to be supported.

4. Cystocele, rectocele, colpocele, uterocele and enterocele do not become hernias by bulging into the vagina or rectum, or even essentially by protruding out of the vagina or rectum; rather they become hernias if and when they bulge through the musculofascial openings in the pelvic floor.

5. Prolapse of abdominal structures is a wandering downward of structures in the abdomen.

6. Hernias are visceral wanderings into or through the abdominal wall or outside the abdomen, and both the viscera and the walls must be taken into consideration.

7. There is no treatment for *prolapsed* viscera outside the abdomen, for when they protrude they are hernias and as such their treatment is hernioplastic.

8. Progress in the correction of all phases of pelvic floor herniation depends on recognizing the hernia and dealing with it in the sound way that one does with hernias in other regions.

9. Hernioplastic work on the pelvic floor is more complicated because the structures which form support and which must be reconstructed have the added function of looking after the sluice gates of that region and have charge also of the functions and timing of reproduction.

10. The consideration of all the phases of construction, function, impairment and complicated reconstruction leads justly to the term "pelvic floor engineering."

REFERENCES

Barrett, Channing W.: Hernias Through the Pelvic Floor, Am. J. Obst., 1909.
Falacies of Atmospheric and Intra-Abdominal Pressure as Support of the Uterus and Abdominal Organs, Surg., Gynec. & Obst., 1908.
Hernias Through the Pelvic Floor, West. J. Surg. *50*:615 (Dec.), 1942.
Hernioplastic Opertaions Upon the Rectum and Pelvic Floor, Am. J. Surg. *59*:519 (March), 1943.
Two Revealing Cases of Rectal Herniation, Surg. Clin. North America *23*:247 (Feb.), 1943.
Interrelation of Impairment of Genital and Rectal Support, South. M. J. *37*:77 (Feb.), 1944.
Herniation Through the Pelvic Floor During Pregnancy, M. Rec. *156*:277 (May), 1943.
Rectal Conditions Associated With Third Degree Tears, J. Internat. Coll. Surgeons *6*:115 (March-April), 1943.
Montgomery, E. E.: Hernia of the Pelvic Floor, Surg., Gynec. & Obst., Jan., 1913.
Miller, Jeff: Clinical Gynecology, St. Louis, C. V. Mosby Company, 1932.
Graham, Roscoe R.: The Operative Repair of Rectal Prolapse, Ann. Surg. *115*:1007–1014 (June), 1942.
Cohn, Isadore: Prolapse of the Rectum: Suggested Operative Procedure, Am. J. Surg. *57*:444–449 (Sept.), 1942.
Allen, V.: Rectal Herniation with Intra-Sphincterian Hernioplastic Operations, Tr. Am. Proct. Soc., 1944.

SUMARIO

Mientras que se reconoce la antigua costumbre en el uso de los términos "prolapsus" y "procidencia," que indican la extencia de un empuje de organos y tejidos abdominales por el suelo de la pelvis o pared caudal, el autor hace o da enfasis a la importancia de colocar estas condiciones o entidades patológicas bajo la misma base anatómica, esto es, como protrusiones o empujes en otras partes de la pared abdominal; dice que son en verdad organos y tejidos que han encontrado un punto débil en la pared y han empujado más o ménos la pared hacia el exterior, precisamente con todos los elementos que constituyen la hernia, y por consiguiente es lógico efectuar una reconstrucción no solo para corregir el prolapsus de la pared, cuya reparación incluye el reponer viscera y tejidos en posición original, pero para cerrar el anillo de hernia musculofascial de tal manera que los tejidos permanézcan en su posición normal intra-abdominal. Este trabajo (articulo) indica que en la region del suelo pelvical la posición baja de la pared caudal (de la cola) y las aberturas terminales predisponen a la hernia y estas condiciones existentes complícan hasta cierto punto la corrección de defectos, ya que la hernia se cierra necesariamente subtotalmente.

El plan de reparación debe tomar en cuenta: (1) los cambios en la estructura y posición de las partes que componen la hernia; (2) los cambios en el suelo pelvical y esfínteres, con ensanchamiento del anillo musculofascial, y (3) la separación de adherencias entre los limites viscerales y el suelo pelvical, esfínteres y sosténes o apoyos. Estos factores no pueden ser considerados aquí bajo el término de prolapsus del utero como tampoco sería propio tratar una hernia umbilical bajo el nombre de la vesicula biliar, si este organo se encuentra en el contenido del sáco.

Muchos autores han reconocido como verdaderas hernias el escape o prolapso del utero al través del anillo inguinal o del anillo umbilical (ombligo) y la hernia al través del anillo ventral en cicatriz; pero las hernias de la vejiga, vagina, utero y recto al través de la pared anterior y posterior del suelo pelvical han sido reconocidas por pocos.

Para corregir las hernias del suelo pelvical, una histerectomía se efectua a veces, y esto debe hacerse cuando el utero está patalógico, pero la histerectomía no se debe considerar adecuada como procedimiento para la hernia, pues el defecto persiste sin embargo. La vagina y el recto no deben ser considerados como canales de la hernia, pues estos solo toman parte con los tejidos empujados.

La cistocele y el rectocele no son más que el empuje al través de la pared anterior vaginal y del suelo vaginal, y ambos condiciónes constituyen la colpocistocele y el colporectocele.

Las hernias son empujes descaminados dentro o al través y fuera de la pared abdominal, y por consiguiente ambos, las visceras y las paredes, deben ser tomadas en consideración.

No hay tratamiento para visceras en prolapsus fuera del abdomen, porque cuando empujan son hernias y el único tratamiento es hernioplastia.

Todos estas consideraciónes — construcción, función, impedimento y reconstrucción complicada — llevan naturalmente al uso del término "ingeniería del suelo pelvical."

RÉSUMÉ

On emploie souvent les termes "prolapsus" et "procidentia" pour les protrusions des viscères abdominaux à travers le plancher pelvien ou la paroi caudale. Néanmoins l'auteur insiste pour que ces déplacements des organes soient envisagés comme les autres protrusions à travers la paroi abdominale. C'est à dire, ce sont des viscères ou des structures abdominaux qui, ayant trouvé un point faible de la paroi, s'y sont insinués et, ayant traversé la paroi, paraissent à l'extérieur.

Quoique qu'on puisse démontrer dans presque tous les cas de hernies une descente ou un prolapsus, cela est un élément secondaire. L'élément majeur est que le contenu herniaire a traversé la paroi abdominale et qu'il est d'importance essentielle que non seulement la descente, le déplacement, soit corrigé mais qu'il faut replacer le contenu herniaire dans l'abdomen et fortifier ou renforcer, ou plûtot obturer, l'anneau musculofacial herniaire de telle façon que le contenu herniaire soit maintenu permanemment dans sa position intra-abdominale normale. Dans le plancher pelvien et dans la partie inférieure de la paroi caudale, il y a des ouvertures pour certains conduits. Ces conduits prédisposent aux hernies. Cela complique la correction de ces hernies, car ces ouvertures ne doivent pas être obturées complètement.

Il faut prendre en considération trois facteurs importants: (1) le changement de position et de structure des parties prédisposant, amorçant, consti-

tuant la hernie; (2) les changements présentés par les supports du plancher pelvien et par les sphincters avec relachement et élargissement des anneaux musculofasciaux; (3) la séparation des attachements entre les terminaisons viscérales et les sphincters et supports du plancher pelvien.

Ces facteurs sont d'une grande importance. Une hernie ombilicale renfermant la vesicule biliaire demande plus que le retour de son contenu dans l'abdomen. Il faut renforcer la paroi. C'est le point capital. Beaucoup d'écrivains ont reconnu que l'utérus peut être et s'est hernié à travers un anneau inguinal, un anneau ombilical et divers autres anneaux de la paroi abdominale, mais les hernies de la vessie du vagin, de l'utérus et du rectum à travers les fentes antérieures et postérieures du plancher pelvien n'ont été reconnues que par très peu d'écrivains comme des hernies.

On a parfois fait l'ablation de l'utérus pour la guérison des hernies du plancher pelvien. Cela est une erreur, et une hystérectomie dans ces cas n'est indiquée que si cet organe est malade ou nonfonctionnant par raison de l'âge avancé de la malade.

L'hystérectomie n'est pas un traitement adéquat de ces hernies. Elle a été faite des milliers de fois, mais la hernie de la vessie urinaire du vagin, du rectum et d'autres structures n'est nullement bénéficiée par cette procédure.

Ce qui constitue la hernie est une protrusion de structure abdominale (vagin, vessie urinaire, rectum, utérus) à travers les anneaux du plancher pelvien. Le vagin et le rectum ne doivent pas être envisagés comme des canaux, des poches ou des receptacles, car ils sont eux-mêmes une partie des viscères herniés.

Une cystocèle ou une rectocèle n'est pas due à l'avancement et l'abaissement de la paroi vaginale, mais comme ces conditions n'existent jamais sans protrusion du vagin, il faut les désigner colpocystocèle ou colporectocèle. Une colpocèle d'un léger degré peut exister sans vessie urinaire ou sans rectum, mais le contraire ne se rencontre pas.

Les hernies sont des chevauchements des viscères dans, à travers ou en dehors de la paroi abdominale, et dans la correction des hernies il importe de prendre en considération et les viscères et les parois abdominales. Il n'y a aucun traitement pour le prolapsus des viscères en dehors de la paroi abdominale, car ces prolapsus existant ici sont des hernies et leur guérison est du domaine des hernioplasties.

Il faut considérer toutes les phases de construction, de fonction, d'affaiblissement et de renforcement du plancher pelvien. Il faut être "ingénieur du plancher pelvien."

## СВОД

Вполне признавая давно существующий обычай употребления терминов «prolapsus» или «procidentia» для обозначения выступления брюшных органов через тазовой пол или каудальную стенку, автор тем не менее подчеркивает, что очень важно рассматривать эти патологические условия с той же точки зрения, как и выступления в других частях брюшной стенки: именно, что это просто органы или структуры чрева, которые нашли слабое место в стенке и выступили через стенку наружу, выполняя, таким образом, все требования грыжи.

Хотя сползание или выпадение, до известной степени, константируется почти во всех грыжах, это является только второстепенным фактором; самой главной патологической переменой является тот факт, что, когда брюшные структуры проходят через брюшную стенку, то починка этой стенки сама по себе не исправляет сползание органов, а должна включить также возврат органов в живот. Это значит, что починка мышечно-фасциального кольца должна быть про-

изведена так, чтобы органы были восстановлены в их нормальное внутричревное положение. Этот доклад обращает внимание на то, что низкое положение каудальной стенки и присутствие отверстий кишечного и мочевого трактов создают в области тазового пола особенное предрасположение к грыже.

Восстановительные меры должны принять во внимание три фактора: (1) перемену в положении и построение грыжевого состава, (2) перемены в супортах тазового пола и в сфинктерах с расширением мышечно-фасцального кольца, (3) отделение спаек между висцеральными конечностями и супортами и сфинктерами тазового пола.

Задача, представленная этими факторами, выясняется употреблением термина «prolapsus uteri» не больше, чем применение к пупочной грыже, содержащей, скажем, желчный пузырь, термина «выпадение желчного пузыря».

Многие авторы рассматривают, как грыжу, выступление матки через паховое, пупочное или оперативное кольцо, но только немногие признают, как таковые, грыжи мочевого пузыря, влагалища, матки и прямой кишки через щели переднего или заднего тазового пола.

При починке грыжевых ослаблений тазового пола необходимо иногда удалить матку. Это нужно, когда болезнь матки дает показание на удаление ее. Если, благодаря возрасту или болезни, матка не функционирует, то ее можно удалить и по менее важному поводу. Но при каких бы то ни было обстоятельствах удаление матки не является само по себе достаточной мерой для лечения грыжи. Это было сделано тысячи раз, но всегда оставляется грыжи мочевого пузыря, влагалища и прямой кишки и, часто, других органов.

Что составляет существо грыжи, это выступление брюшного органа, органов или структур (влагалище, мочевой пузырь, прямая кишка, матка) через кольцо тазового пола. Влагалище и прямая кишка не могут считаться грыжевыми каналами, сумками или вместилищами, так как они сами составляют часть выпавших органов.

Грыжа пузыря (cystocele) или прямой кишки (rectocele) являются таковыми не потому, что они выступают во влагалище, а потому что они выступают через щель в переднем тазовом полу. Но так как они не выступают без влагалища, то они по настоящему должны быть названы colpocystocele или colporectocele, т.е. влагалищно-пузырная или влагалищно-прямокишечная грыжа.

Влагалищная грыжа (colpocele) может до известной степени существовать и без пузыря или прямой кишки, но никогда не наоборот.

Грыжа это блуждание органов внутрь, через или снаружу брюшной стенки. И необходимо принять во внимание не только стенку, но и органы. Нельзя вылечить органы, выступившие снаружу живота, потому что они тогда сотавляют грыжу. Их лечение таким образом грыжево-пластическое.

Соображение всех фаз конструкции, функции, ослабления и сложной реконструкции естественно приводит к терминологии «инженерное искусство тазового пола».

# The Present Status of Continuous Caudal Analgesia in Obstetrics

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WHEN continuous caudal analgesia in obstetrics was introduced by Hingson and Edwards, in 1942, much controversy ensued, partly because of untimely lay publicity and partly because this technic was hailed as the final result in the quest for control of the pain of childbirth. The originators of this technic had used it in 33 instances at the Marine Hospital, Staten Island, N. Y. Their first demonstration outside of their own institution was performed for the staff of the Philadelphia Lying-in Hospital. This was their thirty-fourth case, and it was so dramatic that my associates and I became enthusiastic about the possibilities of the method and decided to study its various ramifications to determine whether or not it was a safe procedure for obstetric practice. After considerable work on cadavers and exhaustive investigation from a pharmacologic and a neurologic standpoint, we concluded that if used under the proper conditions this procedure was safe during the course of labor. Since that time we have have the opportunity of working with Hingson and Edwards in studying the many associated problems which have developed. Also, under the auspices of the United States Public Health Service, a one week postgraduate course in the use of the procedure was established at the Philadelphia Lying-in Hospital in June 1943. Cognizant of the fact that it would be impossible to train an individual properly in this technic in such a short time, we have endeavored, in teaching the four hundred and twenty-five physicians who have taken this course, to stress "what not to do" rather than "what to do."

In the fall of 1943 I had the privilege of presenting an evaluation of this procedure, and in that communication I incorporated some of the don'ts of continuous caudal analgesia. As our knowledge of this method has increased, several have been added, and in this report I should like to bring these don'ts up to date. The following precautions must be recognized if caudal analgesia is to be administered successfully:

Don't think that caudal analgesia is applicable to every woman in labor. We have found that it can be used in approximately 52 per cent of patients.

Don't give it to a patient who is psychologically unsuited to go through labor and delivery in control of her mental faculties.

Don't give it when there is any suggestion or suspicion of the presence of any of the contraindications to its use.

Don't attempt to use this method without the proper equipment.

Don't attempt the procedure without being thoroughly familiar with the anatomy, physiology and pharmacology involved.

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From the Philadelphia Lying-in Unit of the Pennsylvania Hospital.
Presented at the Ninth Annual Assembly of the United States Chapter of the International College of Surgeons, Philadelphia, Pa., October 1944.

Don't attempt this method unless you have had special training.

Don't persist in forcing the needle unless you are absolutely certain about the anatomic landmarks.

Don't persist in inserting the needle a second time if spinal fluid is aspirated.

Don't start the injection until labor is well established. The early discomforts of labor can be controlled by small doses of a barbiturate. The giving of a barbiturate preceding the caudal analgesia we believe should be a routine procedure.

Don't start the caudal injection unless the presenting part is well engaged or fixed in the pelvic brim.

Don't forget to check the exact position, station of the presenting part, amount of cervical dilatation, fetal heart tone, pulse and blood pressure before the caudal analgesia is begun.

Don't attempt this method unless you have the patient surrounded by all of the essentials necessary to meet the emergency in case the dura is entered or a blood vessel is penetrated. This can be combatted, if it should occur, without mortality.

Don't give the full injection until ten minutes has elapsed following the initial dose of 8 cc. and you have made sure that the patient moves her feet satisfactorily.

Don't hesitate to give vasopressor drugs in the presence of a falling blood pressure. Should the blood pressure fall more than 20 mm., the giving of vasopressor drugs and the elevation of the legs at a right angle, together with the administration of 100 per cent oxygen, is all that is necessary to cause it to return to its former level.

Don't forget to check the blood pressure and fetal heart sounds at frequent intervals.

Don't forget that a patient in labor under caudal analgesia must have constant supervision by a competent, trained person. Once the proper level of analgesia is obtained, a trained nurse-anesthetist can supervise the giving of further doses.

Don't forget that infection may occur if the strictest asepsis and antisepsis are not observed.

Don't attempt to use caudal analgesia in a private home.

Don't use this method if the placenta is believed to be in the lower segment of the uterus.

Don't forget that caudal analgesia shortens the first stage of labor.

Don't forget that the patient can aid in giving birth to her child by bearing down at the time of the uterine contractions. We have found that the incidence of spontaneous breech delivery has been increased by using this technic.

Don't forget that there may be an increase of transverse arrest of vertex presentation due to the relaxation of the pelvic muscles. These positions can be rotated easily because of this relaxation.

Don't attempt intra-uterine manipulation, such as version or manual removal of the placenta, without changing to inhalation anesthesia.

Don't allow the presenting part to remain on the perineum for more than a short time.

Don't forget that caudal analgesia lessens the loss of blood in the third stage of labor.

Don't forget to do an episiotomy earlier than with other forms of anesthesia, and when making the repair do not suture too tightly.

Don't forget to give the patient morphine after delivery, because when the analgesia wears off she is hypersensitive to postpartum contractions and to pain in the episiotomy wound.

## COMMENT

I believe that continuous caudal analgesia has become established in the obstetric armamentarium and will continue to be used successfully. However, many important problems which arise from time to time must be evaluated; for example, recently it has been clearly proved that if a solution of metycaine hydrochloride (benzoyl-γ-[2 methylpiperidino]-propylbenzoate hydrochloride) is injected into the caudal canal of a person with hypertension the pressure will be reduced considerably and will remain low for hours and in some instances for days. This finding has led my associates and me to experiment with the use of this procedure in our cases of hypertensive toxemia, and although our studies are incomplete our experience has been such that we believe it to be a distinct advantage in the management of preeclampsia, particularly in the prevention of convulsive seizures. We are enthusiastic as to the eventual outcome of this investigation. In the few cases of eclampsia in which we have had the opportunity of administering this drug according to this technic, the blood pressure has been reduced, the convulsive seizures have ceased, and almost immediately there has been a marked increase in the urinary output. Time does not permit me to elaborate on the physiologic reasons for these results. We hope to present them in more detail at some future time.

Another problem which must be solved is whether or not any of the drug gets into the fetal circulation. In the few instances in which we have had the opportunity of collecting a specimen for analysis at cesarean section, no metycaine hydrochloride has been recovered from the amniotic fluid.

In our experience, the use of continuous caudal analgesia for cesarean section, as reported recently in the *American Journal of Obstetrics and Gynecology,* has continued to be an ideal procedure. At present we are endeavoring to evaluate the use of continuous caudal analgesia and fractional spinal anesthesia for cesarean section. We are convinced that for cesarean section the anatomic approach to anesthesia is far superior to any inhalation anesthesia, and we seldom use the latter for this type of delivery. The rapid, smooth convalescence of the mothers and the excellent condition of the babies, we believe, will eventually result in the use of one of the regional anesthetics whenever possible.

My associates and I have personally observed the use of this technic in 2,021 cases without a single maternal or fetal mortality attributable to the use of this anesthetic. We have concluded that if continuous caudal analgesia is to be used in obstetrics its success is dependent on teamwork between the anesthetists and the obstetricians. Because most obstetricians with a large obstetric practice are too busy to use this technic, the ideal arrangement is to have a competent full time anesthetist manage the patient from the anesthetic standpoint, in close cooperation with the attending obstetrician.

## CONCLUSION

My associates and I are firmly convinced that continuous caudal analgesia has a permanent place in obstetric practice. During the past two years we have learned of the many benefits derived from the use of this method in safeguarding the obstetric patient. This technic is a distinct addition to the various other methods which have previously been used with safety for control of the pain of childbirth.

SUMARIO

Los autores han observado, personalmente, el uso de la anestesia por la cola o canal raquídeo dorsal (anestesia caudal) en 2,021 casos sin mortalidad maternal o fetal que pudiese ser atribuida al uso de esta anestesia. Como suplemento a una relación hecha anteriormente a esta se da aqui una lista de precauciónes que se deben tomar en cuenta en el uso de este método.

Ellos están firmemente convencidos, sin embargo, de que la anestesia caudal continuada ocupa un puesto permanente en la práctica de obstetricia. En dos años últimos pasados ellos han comprobado las ventajas derivadas de este método, para resguardar al paciente de parto. Esta técnica es una contribución importante a los muchos otros métodos que han sido usados con seguridad para moderar o eliminar los dolores del parto.

RÉSUMÉ

Les auteurs ont personellement observé 2,021 cas d'anesthésie caudale. Il n'y eut aucune mortalité, maternelle ou fétale, qui puisse être attribuée à l'emploi de cette méthode d'anesthésie. Comme supplement à leur rapport antérieur, ils énumèrent beaucoup de conseils qu'il ne faut pas ignorer. Ils sont convaincu que l'anesthésie caudale continué a une place permanente dans la pratique obstétricale. Durant les deux dernières années, ils se sont aperçu que l'emploi de cette méthode sauvegarde la femme en couches. Cette technique est une addition distincte aux autres méthodes sûres employées pour controler la douler qui accompagne l'accouchment.

СВОД

Даны личные наблюдения авторов в 2.021 случаях каудальной анэстезии без единственного случая смерти матери или плода, приписанного этому способу. Дополнительно к прежнему докладу дан список «запрещений», которые необходимо принять во внимание при применении этого способа. Однако, они вполне убеждены, что продолжительная каудальная анэстезия завоевала постоянное место в акушерской практике. В последние два года они нашли, что в обережении благополучия беременной женщины этот способ является очень полезным. Эта методика является определенным добавлением к разным другим прежде употребленным способам уменьшения родильных болей.

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CANCER OF THE COLON

*(Continued from page 241)*

7. Сотрудничество интерниста и хирурга до и после операции является неоценимым.

В этих стадиях очень важно предохранить или противодействовать появлению гипопротеинемии.

8. Лучше всего употребить спинальную анэстезию, продолжительным или фракционным способом.

9. Не должно быть несогласия со стороны врача относительно постоянной колостомии.

Перманентная колостомия продлила многие жизни, и больные опять сделались полезными гражданами.

10. В результате усовершенствования до — и после — операционного режима, особенно с суксинил-сульфа-тиозолом и лучшей операционной техникой, смертность 70%-80% прошлого поколения теперь сведена к 2%.

# A Survey of Surgical Results in Cancer

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THE general feeling of hopelessness associated with cancer is almost universal among the laity and too prevalent among physicians. Any factual evidence of progress toward the solution of its cause, prevention and cure is a real boon and should be kept in mind as an antidote for pessimism.

Through the centuries from the earliest times, various theories as to etiology have been propounded, but none has become the accepted answer for long. The cancer of the ancients was considered one disease, but in the eighteenth and nineteenth centuries great advance was made by the discovery that included in this category were many entities. The other conditions were differentiated from cancerous disease; their causes were determined, and for most of them treatment was inaugurated. Leprosy, syphilis, elephantiasis, actinomycosis, blastomycosis and tuberculosis are some examples. In the twentieth century another entity was determined, in the form of Hodgkin's disease (lymphogranulomatosis). This multiplex pathology of cancer doubtless still persists, and here lie bright prospects for research and progress.

Another line of advance lies in the stressing of the prevention of malignant growth by removal of benign growths and of sites of chronic irritation that are prone to undergo degenerative change. This necessitates periodic examinations, so that such conditions may be discovered and adequately dealt with while they are still in a stage at which complete removal is possible.

Since cancer is still believed to be a local disease in its beginning and complete removal is thought to be the surest road to relief and possible cure, surgery offers the most hope to date, and gives the most encouraging results. Many other methods have been brought to the fore through the years, largely to supplant surgical treatment. There have been the Mattei electricities, Hodenpyl's serum, the enzyme treatment of Beard, the Micrococcus neoformans of Doyen, the diathermy of Nagelschmidt, Coley's fluid, and many other honestly proposed measures that have failed. In this century radium and roentgen rays have been urged as a substitute for surgical intervention. The great claims made for these have not resulted in their universal acceptance. In fact, today there are increasing disappointment and a gradual recognition of the limited field of usefulness of irradiation. My own experience leads me to the conclusion that radium and x-rays have no ferreting ability, and that their choice of cells—neoplastic or normal—is indiscriminate.

The treatment which has stood the test of time and experience is removal of the cancer mass, either by thermic, electric or chemical means or by meticulous use of the surgeon's knife with due regard to the avenues of extension. Surgical removal should be stressed as giving a real expectation of cure in early stages, and as possibly being curative as well as affording relief in well ad-

Read at the Ninth National Assembly of the United States Chapter of the International College of Surgeons, Philadelphia, October 1944.

vanced stages. With the attempt to have people come early for examination, the dire consequences of delay are so emphasized that this often robs a patient of hope, so that he puts off seeking help until it is impossible to do anything but palliate. Such emphasis engenders a condition of mental suffering which, added to the physical, is most unfortunate, especially in this age of a cancer-conscious laity.

My object is to bring into the field of well advanced cancer evidence that will arouse confidence in relief from suffering and prolongation of life, and in cure in a substantial number of cases, through surgical means.

The difficulties of tracing patients treated in any general ward or dispensary through any practical follow-up system over a space of years early impressed me. Changes in institutions and in personnel and the constant changes of addresses of patients make almost insurmountable obstacles. Accordingly, from the beginning of my private practice I inaugurated a follow-up system of the private patients. The evident personal interest shown by my sending out of letters, besides the desire to obtain data of scientific value, has borne fruit these thirty years and more.

A few years ago, in an article on "The End Results of Surgery in Breast Cancer," I cited many viewpoints for and against the use of radiation in the treatment of malignant neoplasms of the mammary gland. My own statistics were based on 223 unselected cases from my private files, in 21 of which systematic irradiation had been given over a period of time. While in some of these cases the local growth seemed to have been benefited, the extensive metastases which had developed were such as to render the patients inoperable by the time I was consulted. In 52 other cases the patients had irradiation before, and in some instances after, I operated. Five of the 52 patients survived for five years and 1 for eleven years—11.53 per cent. There remained 150 cases in which the treatment consisted of radical surgical removal only (the same procedure being followed for all), with a five year and over survival rate of 51 patients (34 per cent):

| | | | | | |
|---|---|---|---|---|---|
| 19 | lived | from | 5 | to | 10 years |
| 22 | lived | from | 10 | to | 20 years |
| 8 | lived | from | 20 | to | 30 years |
| 1 | lived | 31 years | | | |
| 1 | lived | 36 years | | | |

Thirty-five of these patients are still alive, free from malignant growth.

The *Transactions of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons* for 1944 will contain a paper I read in September 1944 on "Surgery of Uterine Cancer," which reports on 62 of my private cases in which surgical treatment was the only method used. Most of the growths were so far advanced when I first saw the patients that palliative operation was performed only because of the pleading of the suffering patients and the insistence of their families that something be done. Eighteen of the 62 patients (29.03 per cent) survived from six to thirty-three years; 11 are still living and apparently perfectly well:

| | | |
|---|---|---|
| 1 | lived | 6 years |
| 1 | lived | 7 years |
| 2 | lived | 8 years |
| 1 | lived | 10 years |
| 1 | lived | 11 years |
| 2 | lived | 12 years |
| 1 | lived | 13 years |
| 4 | lived | 15 years |
| 1 | lived | 21 years |
| 1 | lived | 22 years |
| 1 | lived | 25 years |
| 1 | lived | 30 years |
| 1 | lived | 33 years |

For advanced cancer of the uterus I have for over thirty years employed my operation of starvation ligature and lymphatic block. The shutting off of

blood supply to cancerous tissue lessens the rapidity of growth and may prolong life for years even though the neoplasm cannot be totally removed.

In this paper I desire to add to the already mentioned cases of at least five year cures of cancer resulting from radical extirpation. Excluding the cases of cancer of the breast and uterus previously reported, I have reached to date in this present series, 249 additional cases in which operation was the only method employed. These embrace instances of cancer of the face, stomach, rectum, colon, parotid gland, thigh, tongue, floor of the mouth, orbit, glands of the neck, ear, hand, knee, umbilicus, nose, lip and arm. Of the 249 patients, 100 (40.12 per cent) have passed the five year survival term, as follows:

19 lived from 5 to 10 years
20 lived from 10 to 15 years
23 lived from 15 to 20 years
20 lived from 20 to 25 years
12 lived from 25 to 30 years
4 lived from 30 to 35 years
2 lived 39 years

Of these, 44 are dead, 27 have been lost track of and 29 are still living and apparently perfectly well; 32 of those who died did not have any return of the malignant growth in any part of the body.

The five year and over survival rate of the surgical patients in this series (those with cancer of the breast and of the uterus and the foregoing general series—a total of 461), with 169 survivals, is 36.74 per cent. In many of the cases, in which the growths were considered inoperable by some surgeons, heroic measures had to be taken; in some instances, even I was surprised at the outcome; in all, radical, careful, adequate surgical removal, with attention to the minutest details, was carried out, with pathologic examination, often rechecked, to eliminate any possibility of doubt as to diagnosis.

## CONCLUSION

In summing up, I believe that in the treatment of cancer surgical extirpation is still the method of choice and that irradiation is far from the panacea its advocates hold it to be. Devoutly it is hoped that surgical treatment may some day be discarded and means for prevention and successful treatment found in the field of medicine. The research that is being carried on today along the lines of biotherapy, chemotherapy, physiologic chemistry, the hormones, vitamin deficiency, and others, may result in a real harvest in the future.

## REFERENCES

Bainbridge, W. S.: The Cancer Problem, New York, N. Y., The Macmillan Company, 1914; French edition, Louvain, Belgium, A. Uystpruyst, 1922; Spanish edition, Barcelona, Spain, Editorial Cervantes, 1924; Italian edition, Rome, Italy, Luigi Pozzi, 1927; Polish edition, Warsaw, Poland, Polski Komitet do Zwalczania Raka, 1927; Arabic edition, Beirut, Syria, The American Press, 1935.

The End Results of Surgery in Breast Cancer, M. Rec. *153*:353 (May 21), 1941; M. Press & Circ., London *205*:400 (May 14), 1941.

Surgical Technic in Cancer of the Breast, J. Internat. Coll. Surgeons *4*:544 (Dec.), 1941.

The Cancer Problem—Progress in Its Solution, M. Rec *155*:299 (May), 1942.

Cancer Development from Chronic Irritation, Indust. Med. *6*:11 (Jan.), 1937.

Arterial Ligation for Irremovable Cancer of Pelvic Organs: Technic Adapted and Amplified, Woman's M. J., April 1911.

Arterial Ligation with Lymphatic Block in the Treatment of Advanced Cancer of the Pelvic Organs, with a Report of Fifty-six Cases, Am. J. Obst. & Dis. Women & Child., 1913, vol. 68, no. 4.

Arterial Ligation and Lymphatic Block in Pelvic Malignancy, Tr. Am. A. Obst., Gynec. & Abd. Surg., 1936.

Crossen, H. S., and Crossen, R. J.: Operative Gynecology, ed. 5, St. Louis, Mo., C. V. Mosby Company, 1938.

Ewing, James: Neoplastic Diseases, ed. 4, Philadelphia, Pa., W. B. Saunders Company, 1942.

Graham, E. A.: Year Book of General Surgery, Chicago, Ill., Year Book Publishers, 1940 and 1943.

Kennedy, J. W.: Practical Surgery of the Abdominal and Pelvic Regions, ed. 2, Philadelphia, Pa., F. A. Davis Company, 1943

Maingot, Rodney: Postgraduate Surgery, New York, N. Y., D. Appleton-Century Company, 1936.

Pack, G. T., and Livingston, E. M.: Treatment of Cancer and Allied Diseases, New York, N. Y., Paul B. Hoeber, Inc., 1940.

Thewlis, M. W.: Metastases—Medical and Surgical, Charlotte, N. C., Charlotte Medical Press, 1944.

Thorek, Max: Modern Surgical Technic, Philadelphia, Pa., J. B. Lippincott Company, 1938.

## SUMARIO

En el pasado muchas enfermedades agrupadas bajo el nombre de cancer han sido separadas en sus respectivas entidades, tal como la sifilis, la tuberculosis y la actinomicosis; y algunos han sido hallado curables. Esto demuestra el

múltiple cuadro patológico del cancer, que indudablemente todavía existe. Más investigación y experimento podrán clarificar la solución del gran problema.

Exámenes físicos, en periodos, y excision de tumores benignos y de areas de irritación son procedimientos profilácticos.

Aun cuando muchos métodos de tratamiento han sido aclamados por años, muchos de ellos han sido abandonados y la popularidad de otros disminuye. El radio y los rayos-X no inspiran confianza y su selección de celulas neoplasticas o normales es incierto. Solo aparecen tener un efecto cauterizante.

La resección quirúrgica es el tramiento que ha demostrado eficacia. El autor está de la opinión que en el presente estado de nuestro conocimiento el mejor servicio al enfermo es practicar la cirugía radical y ademas emplear radiología y aun medicamentos que contribuyan, en el juicio del cirujana, para curar y evitar el recurrir.

Por una larga experiencia el autor ha citado sus estadisticas de los resultados de la cirugía del seno (pecho) y del utero por el cancer. En este artículo el autor somete los resultados obtenidos por intervención quirúrgica en otras partes del cuerpo, de cinco a treinta y nove años despúes de operación; los examenes histopatologicos fueron comprobados.

A pesar que la cirugía hasta la actualidad es el método de preferencia, se espera que estudios de la quimoterapéutica y la bioterapéutica, de quimica-fisiologica, de los hormones y de las deficiencias de vitaminas resolverán el problema del cancer y que la cirugía se hara más limitada.

SOMMAIRE

Dans le passé plusieurs maladies qu'on avait groupées sous le titre de cancer ont été séparées dans leurs entités. Ainsi la syphilis, la tuberculose, l'actinomycose et certaines autres ont été trouvées curables. Cela nous porte à croire que des recherches futures clarifieront le sujet et aideront à résoudre entièrement le problème.

Les examens physiques périodiques, l'ablation des tumeurs bénignes et la suppression de toutes sources d'irritation constituent d'excellentes mesures préventives.

Quoique bien des modes de traîtement aient joui d'une vogue passagère, la plupart ont été abandonnés et la popularité d'autres est dans le déclin. Le radium ef les rayons X ne sont pas des furets, et dans leur choix de cellules sont aveugles. Apparemment leur action est celle d'un cautère.

L'ablation chirurgicale est le traîtement qui a fait ses preuves. L'auteur préconise le traîtement chirurgical, auquel on peut ajouter ce (radiation ou médication) qui peut dans le jugement du chirurgien contribuer à la guérison ou à la prévention de récidives.

L'auteur a déja rapporté des statistiques concernant les résultats obtenus par la chirurgie dans les néoplasmes malignes du sein et de l'utérus. Dans la publication d'aujourd'hui, il soumet les rapports de cas de tumeurs malignes d'autres parties du corps. Dans chaque cas, deux pathologistes examinèrent les coupes et confirmèrent le diagnostic ici rapporté.

La chirurgie est encore la méthode de choix. Il est à esperer que des recherches en chimitherapie, en biothérapie, en chimie physiologique, en hormones, en déficience vitamine, etc., arrivent à résoudre le problème du cancer et nous portent à abandonner l'emploi du traîtement chirurgical.

*(Russian summary on page 281)*

DATA ON 100 CASES

| No. | Name | Age | Sex | Operation | Diagnosis | Laboratory Report | Results | Comments |
|---|---|---|---|---|---|---|---|---|
| 1 | HD | 5 | M | October 1902<br>Removal of part of right supramaxillary and malar bone to within inch of ear and removal of part of canthus of right eye | Massive angiosarcoma of face involving right maxillary and malar bones | Angiosarcoma of bone and soft parts | October 1927, perfectly well; desired relief of some of deformity of face because of coming marriage; plastic operation November 1929 with transplants from leg; excellent results—well *32 years* | Nov. 1934, taken with chest condition, diagnosis pneumonia; died of melanocarcinoma of lung, mediastinum, and abdominal viscera; no paralysis of face |
| 2 | OK | 49 | F | December 1919<br>Excision of pylorus with ⅓ of stomach removed; gastroenterostomy | Carcinoma of pylorus; large ulcerated mass; no metastasis | Gastric carcinoma; no glands involved | Perfectly well for *22 years;* no return of malignant growth | Died in 1941 of cerebral hemorrhage |
| 3 | WS | 46 | M | 1910<br>Resection of transverse colon, great omentum, transverse mesocolon with glands; portion of greater curvature of stomach removed with gastrocolic omentum; enterosigmoidostomy | Advanced carcinoma of transverse colon | Adenocarcinoma of transverse colon | Excellent health for *28 years;* no local return | Died 1938 of cancer of prostate |
| 4 | ET | 45 | M | November 1909<br>Excision of rectum, one stage, modified Kraske<br><br>1911<br>Removal of slight recurrence at new outlet | Carcinoma of lower part of rectum | Adenocarcinoma | Lived *23 years* free from cancer | In spite of extensive operation by using gluteal muscle, had excellent control throughout the 23 years of life; died without any cancerous disease |
| 5 | JZ | 56 | F | March 1924<br>Excision of rectum and entire pelvic colon by combined method; enlarged glands along mesentery of lower part of bowel removed en masse; intestine brought down to rectal outlet and sphincter reformed | Carcinoma of rectum | Carcinoma | Well, no return, February, 1944, *20 years* later | Only discomfort is some constipation; a few times a year has to have sphincter dilated at office |

| *No.* | *Name* | *Age* | *Sex* | *Operation* | *Diagnosis* | *Laboratory Report* | *Results* | *Comments* |
|---|---|---|---|---|---|---|---|---|
| 6 | JH | 49 | M | November 1912<br>Posterior gastroenterostomy<br><br>December 1912<br>Partial gastrectomy | Carcinoma of stomach | Adenocarcinoma of stomach; glands normal | *18 years* alive and well; patient lost track of | Condition was so poor that it was considered hazardous to do both operations at same time; in 8 weeks between the two, patient's condition improved remarkably, but at second laparotomy growth on anterior wall of stomach had extended considerably and some enlarged glands appeared |
| 7 | GH | 54 | F | 1909<br>Combined operation using vaginal outlet; removed 2½ feet (75 cm.) of rectum and pelvic colon with mesorectum and mesosigmoid; sphincter and last 2 inches (5 cm.) of rectum saved; brought cut end of intestine down into pelvis and attached it to rectum just above anus. | Carcinoma of lower part of colon | Adenocarcinoma of rectum | Alive and well for *15 years;* no recurrence in abdomen | Died November 1924 of pulmonary edema, pneumonia; probable carcinoma of lung; no autopsy |
| 8 | WS | 59 | M | May 1915<br>Excision of rectum and pelvic colon | Carcinoma of bowel | Adenocarcinoma of rectum; 3 plus Wassermann reaction | No return; died May 1926, *11 years* later, cause unknown | |
| 9 | GVC | 34 | M | March 1916<br>Radical operation with removal of entire parotid gland | Mixed tumor | Malignant mixed tumor of parotid gland | Well for *21 years;* lost track of in 1937 | No facial paralysis |
| 10 | HG | 19 | F | August 1916<br>Midthigh amputation | Sarcoma of knee | Sarcoma | Well and strong August 1944, *28 years* later | Wears well fitted artificial leg; almost forgets handicap; is successful editor |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 11 | MA | 34 | F | April 1905<br>Amputation of right thigh at hip joint | Carcinoma in old scar of thigh extending to groin | Carcinoma | Perfectly well in 1940, *35 years* later; no recurrence | Before amputation had many operations by other surgeons for repeated recurrences |
| 12 | SS | 49 | F | October 1936<br>Radical amputation of left breast, with removal of left axillary contents | Carcinoma | Adenocarcinoma | No return August 1944, *8 years* | |
| 13 | JL | 10 | F | January 1923<br>Excision of a massive tumor of neck with all glands on left side; tumor involved external and internal jugular veins and sternocleidomastoid muscle; all removed en masse | Malignant neoplasm | Angiosarcoma | Well for *20 years;* has married and has 2 healthy children | Several times has had an infected throat and twice a small supramaxillary abscess on left side, but no recurrence of malignant growth |
| 14 | EE | 24 | M | May 1911<br>Excision of part of jaw including epulis at site where two teeth had been removed | Malignant epulis | Round cell sarcoma | Well for *7 years;* lost track of in 1918 | |
| 15 | HS | 10 mo. | M | May 1905<br>Removal of angiosarcoma of face involving inner canthus of left eye, side of nose and extending almost to lower lip | Angiosarcoma of face | Angiosarcoma | Well for *39 years;* no return | In operating on so extensive a growth in patient of early age of 10 months and with great danger of hemorrhage, operator performed operation in two stages, first coagulation of larger vessels and then excision |
| 16 | BG | 46 | F | April 1909<br>Removal of epithelioma of left orbit, involving eyelid and eye<br><br>June 1909<br>Cavity of orbit curetted; part of frontal bone and | Epithelioma | Epithelioma, vasocellular | Well with no return in *20 years* | After operation, wound leaked cerebrospinal fluid for some days |

| No. | Name | Age | Sex | Operation | Diagnosis | Laboratory Report | Results | Comments |
|---|---|---|---|---|---|---|---|---|
| | | | | orbital plate removed; dura mater, a portion of which was exposed (the size of a 10 cent piece), was involved<br><br>December 1909<br>Plastic repair with flaps and skin grafting | | | | |
| 17 | TJ | 53 | M | May 1917<br>Excision of all glands of right side of neck with ligation of external carotid artery on same side and all its branches except temporal<br><br>June 1917<br>Ligation of external carotid artery and all its branches except temporal on left side | Malignant growth | Malignant mixed tumor of glands of neck | Lived *7 years*, during part of which time he served in war in Y. M. C. A. work; no recurrence; died of acute heart block following pneumonia, September 1924 | General condition of patient too poor to perform both operations at one time |
| 18 | SS | 60 | F | May 1908<br>Recurrent epithelioma of inner canthus of eye, orbit and antrum; complete removal of all diseased tissue, which included portion of nasal process of superior maxilla | Epithelioma | Epithelioma | Well for *15 years;* no recurrence; later lost track of | Later had skin graft from arm |
| 19 | TM | 49 | M | March 11, 1904<br>Both lingual arteries tied; both submaxillary glands with ducts that enter mouth removed; also many enlarged sublingual and lymphatic glands from region of left tonsil to dome of the pleura; similar complete removal of glands on right side; forced mouth open and cauterized cauliflower mass with Paquelin cautery | Carcinoma | Carcinoma of tongue and glands | Lived without any recurrence for *8 years;* during this time he married and had one child; able to talk; died in 1914 of pneumonia | Between 1st and 2d operation, fed for a time through rectum and gained rapidly; weight when patient entered hospital was 129 pounds (58 Kg.); when he left it was 139 pounds (63 Kg.); in 4 years it was 160 pounds (72 Kg.) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | March 28, 1904<br>Entire tongue and part of floor of mouth removed<br><br>May 1912 and June 1912<br>Cauterized small ulcer on floor of mouth | | | | |
| 20 | LR | 41 | M | June 1907<br>Removal of growth on tip of tongue, including a wedge-shaped section of healthy issue | Carcinoma | Squamous cell carcinoma of tongue | Well for *10 years;* then lost track of | |
| 21 | ET | 63 | M | April 1909<br>Excision of epithelioma of lower lip, left side, and removal of all glands of neck | Epithelioma of lip | Epithelioma, actively malignant | Well for *21 years;* no return; disease beginning extension on mucous membrane along buccal wall | Died of prostate disease with renal complications, Jan. 1930 |
| 22 | OW | 48 | M | January 1913<br>Removal of angioma, with ulcer size of a 50 cent piece, of lower lip involving floor of mouth and extending to left angle of jaw and down on sternum; two stage operation (first ligating vessels and then excising ulcerated area of lower lip) | Epithelioma or angioma | Epithelioma and angioma | Well for *15 years;* no return of malignant growth | |
| 23 | EN | 59 | F | December 1914<br>Excision of part of superior maxilla into antrum and removal of portion of upper lip | Carcinoma | Carcinoma | Well for *30 years;* last report, in Aug. 1944, in excellent condition | |
| 24 | DP | 60 | M | May 1908<br>Radical removal of growth of orbit, lids and tissue of cheek | Cancer of face and orbit | Epithelioma | Well for *26 years;* died in 1934 without any return of cancer | |

| No. | Name | Age | Sex | Operation | Diagnosis | Laboratory Report | Results | Comments |
|---|---|---|---|---|---|---|---|---|
| 25 | OL | 57 | M | May 1912<br>Removal of extensive sarcoma of left side of neck involving internal jugular vein, external and anterior jugular veins and sternocleidomastoid muscle and glands | Sarcoma of neck | Melanotic sarcoma | Well for *18 years;* no return of sarcoma; killed in automobile accident in 1930. | Had pneumonia in 1925 and rectal abscess in 1929 |
| 26 | LH | 70 | M | January 1909<br>Removal of left half of tongue with submaxillary and cervical glands on left side of neck | Epithelioma | Epithelioma | Well for *18 years;* no return of trouble | Died in 1927, at 87 years; no cancer present |
| | | | | January 1913<br>Excision of ulcer of tongue | Ulcer | Nonmalignant ulcer of tongue | | |
| | | | | January 1916<br>Excision of early epithelioma of lip | Epithelioma | Epithelioma | | |
| 27 | TF | 37 | M | December 1908<br>Castration of left testes and inguinal gland | Sarcoma | Sarcoma, spindle cell | Well for *10 years* | Died in 1918 of perforated gastric ulcer |
| 28 | MF | 37 | M | March 1922<br>Wide excision of mucous membrane of buccal wall | Cancer of buccal wall | Early epithelioma | No return 7½ *years* later, Dec. 1929 | |
| 29 | VW | 60 | M | December 1908<br>Excision for advanced epithelioma of ear inside of concha and also glands of neck | Epithelioma | Epithelioma | Well for *18 years;* no return | Lost track of |
| 30 | MY | 67 | M | April 1915<br>Tied off external carotid and its branches; excision of extensive recurrent carcinoma of ear involving glands of neck and temporal region | Carcinoma | Carcinoma | Well for *16 years* | Cause of death unknown |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 31 | EC | 39 | F | 1908<br>Excision of malignant carcinomatous epulis of lower jaw<br><br>1920<br>Excision of cyst of inferior maxilla, not at site of previous growth | Epulis<br><br>Bone cyst | Carcinoma | Well for *20 years;* no recurrence<br><br>No return in *8 years* | Last heard from in Sept 1928 |
| 32 | WB | 30 | M | January 1907<br>Excision of large tumor of parotid gland with entire gland | Sarcoma | Myxosarcoma | Well for *30 years;* no return | Died in 1937 |
| 33 | PF | 28 | M | June 1911<br>Excision of part of ear with cartilage, and part of lining of auditory canal | Chronic inflammation, precancerous | Malignant degeneration | Well for *29 years;* no return | |
| 34 | SA | 55 | M | February 1915<br>Excision of growth in mucous membrane of buccal wall with parts of floor of mouth and lower jaw; removal of glands of neck on diseased side<br><br>March 1915<br>Plastic operation | Extensive epithelioma of buccal wall and beginning cancer of inferior maxilla | Epithelioma, prickle cell type; glands of neck hyperplastic | Well for *23 years* | Died in 1938 of acute pneumonia |
| 35 | LC | 33 | M | May 1911<br>Excision of malignant epulis of superior maxilla involving antrum | Malignant epulis | Degenerating epulis | Well for *5 years* | Last heard from in April 1916 |
| 36 | JG | 41 | M | January 1921<br>Excision of parotid gland with massive tumor and glands of neck on same side; facial nerve saved | Sarcoma | Round cell sarcoma of parotid and neck glands | Well for *13 years;* no return | |

| *No.* | *Name* | *Age* | *Sex* | *Operation* | *Diagnosis* | *Laboratory Report* | *Results* | *Comments* |
|---|---|---|---|---|---|---|---|---|
| 37 | AG | 46 | M | May 1912<br>Excision of recurrent epithelioma of hand between small and ring fingers; amputation of part of hand and two fingers; bone involved. | Epithelioma | Epithelioma, prickle cell type, recurrent | Well for *28 years;* no return | Died in March 1940; was a roentgenologist; condition of hand was due to x-ray burns |
| 38 | FG | 53 | F | October 1917<br>Excision of growth of right knee | Undetermined | Giant cell sarcoma | Well for *22 years;* no return | Died November 1939 of cancer of intestines |
| 39 | AI | 40 | M | October 1907<br>Removal of extensive epithelioma of lower lip and glands of neck on same side | Epithelioma | Epithelioma of lip with involvement of glands of neck | Well for *16 years;* no return | In March 1923 had a slight plastic operation to enlarge mouth, which had contracted |
| 40 | JK | 20 | F | January 1918<br>Removal of multiple cysts of parotid region and back of leg<br><br>June 1924<br>Removal of growths from various parts of body: arm, abdomen, near eye | Malignant tumors, nature undetermined<br><br>As above | Multiple congenital epidermoid cysts with epitheliomatous change<br><br>As above | Well for *16 years;* no return | Last seen in January 1934 |
| 41 | JK | 54 | M | January 1928<br>Excision of carcinoma of lower lip and glands of neck on same side | Carcinoma | Squamous cell carcinoma of lip; glands normal | Lived *11 years;* no local recurrence | Died in May 1939 of cancer of stomach |
| 42 | NL | 52 | M | October 1930<br>Excision of parotid tumor, sublingual and submaxillary glands, and glands of neck on same side | Malignant tumor of parotid gland | Adenofibroma with malignant degeneration | Well for *14 years* | Last seen in Aug. 1944 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 43 | AB | 41 | M | August 1918<br>Excision of recurrent growth of left side of mouth; tying off of external carotid artery in two places; excision of glands of neck down to pleura | Advanced carcinoma of mouth and neck | Carcinoma | Well for *5 years;* lost track of since October 1923 | In May 1918 was operated on by another surgeon and given up as inoperable |
| 44 | HG | 40 | F | January 1931<br>Removal of entire umbilicus and obliteration of umbilical vein to edge of liver and of urachus to fundus of bladder | Early malignant growth | Fibroadenomyxoma dynamically malignant | Well for *13 years;* no return | Last seen February 1944 |
| 45 | TD | 40 | M | May 1913<br>Extensive excision of epithelioma of mouth and entire inferior maxilla<br><br>February 1914<br>Excision of small recurrent growth<br><br>May 1916, April 1917, March 1924 and October 1926<br>Plastic operations | Carcinoma | Carcinoma | Well for *17 years;* no return; last seen January 1931 | After extensive removal of entire lower jaw and glands of neck both sides, part of tongue and floor of mouth, had excellent repair with 4 plastic operations; presentable appearance |
| 46 | CB | 40 | M | February 1927<br>Excision of carcinoma of lower lip; removal of all glands of right side of neck, including submaxillary and sublingual | Carcinoma | Squamous cell carcinoma, extensive invasion of glands; acute and chronic lymphadenitis | Well for *5 years;* no return | Lost track of since 1932 |
| 47 | PC | 36 | M | 1907<br>Removal of epithelioma above upper lip on cheek (In 1903 patient had been treated with x-rays for 3 months; recurrence in 1906) | Epithelioma | Epithelioma | Well for *22 years;* no recurrence | Excessive smoker; died in 1929 of carcinoma of jaw |

| *No.* | *Name* | *Age* | *Sex* | *Operation* | *Diagnosis* | *Laboratory Report* | *Results* | *Comments* |
|---|---|---|---|---|---|---|---|---|
| 48 | NM | 27 | F | November 1914<br>Removal of extensive epithelioma of dorsum of right hand and parts of two fingers | Epithelioma | Epithelioma | Well for *30 years;* no recurrence; last seen June 1944 | Had been advised by another doctor to have arm amputated at shoulder to save her life, so extensive was cancer |
| 49 | CC | 27 | F | February 1926<br>Cauterization of ulcerating area on face and removal of entire cancerous mass by elliptic incision | Ulcerating cancer of lower lip and chin | Squamous cell carcinoma | Well for *18 years;* no recurrence; last seen July 1944 | Cancer due to electrical removal of hair on face and chin by another doctor; disease began in these scars |
| 50 | HL | 60 | M | January 1917<br>Excision of small angiosarcoma of forehead<br><br>August 1925<br>Excision of carcinoma of cheek | Angiosarcoma<br><br>Epithelioma | Angiosarcoma<br><br>Squamous cell carcinoma | Well for *27 years;* last seen August 1944 | No recurrence of either growth |
| 51 | AK | 37 | F | October 1905<br>Removal of epithelioma on bridge of nose<br><br>February 1927<br>Removal of beginning epithelioma on face in areas of keratosis | Epithelioma<br><br>Epithelioma | Epithelioma<br><br>Epithelioma | Last report Sept. 1940, in excellent condition<br><br>No return for *22 years,* 1905 to 1927 | Removal of ulcerative lesion on face and nose by another surgeon in 1937; laboratory report, epithelioma |
| 52 | MS | 66 | F | April 1916<br>Excision of epithelioma of face under eye and extending toward alae nasi | Epithelioma | Pigmented ulcerated area in skin; basic degeneration of stroma and areas of small round cells | Well for *28 years;* no return | |
| 53 | WS | 54 | M | June 1917<br>Excision of small epithelioma of lower lip; liberal V-shaped incision through normal tissue | Epithelioma | Epithelioma | Well for *27 years;* no return | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 54 | IN | 12 | F | January 1915<br>Complete excision of angiosarcoma size of half a hen's egg on forehead | Angiosarcoma | Angiosarcoma | Well for *15 years;* no return | |
| 55 | AT | 55 | M | February 1936<br>Removal of penis, with glands in inguinal and femoral region on both sides | Carcinoma | Squamous cell carcinoma | Last report, August 1944, *8 years* later, patient doing well | |
| 56 | ER | 56 | F | August 1919<br>Excision of epithelioma of cheek | Epithelioma | Epithelioma | Well for *25 years;* no recurrence | |
| 57 | TM | 60 | M | December 1915<br>Excision of epithelioma of parotid region of face | Epithelioma | Epithelioma | Well for *9 years;* no return at site of growth | Died of pneumonia Dec. 1924 |
| | | | | November 1920<br>Excision of epithelioma of wing of left ear | Epithelioma | Epithelioma, prickle cell | No return at time of death | |
| 58 | FP | 70 | M | March 1914<br>Excision of epithelioma of finger | Epithelioma | Epithelioma | Well for *10 years;* no return | Died in 1924 |
| 59 | GH | 40 | F | February 1914<br>Excision of epithelioma of cheek | Epithelioma | Epithelioma, basal cell | Well for *5 years;* no return | Died of influenza March 1919 |
| 60 | WG | 58 | F | May 1920<br>Excision of ulcerated epithelioma of face | Epithelioma | Epithelioma | Well for *5 years;* no return | Died of cerebral paralysis 1925 |
| 61 | LB | 64 | F | January 1921<br>Excision of ulcerating epithelioma from dorsum of left hand | Epithelioma | Epithelioma | Well for *19 years;* no return | Died in Feb. 1940 of chronic arteriosclerosis and chronic myocarditis |

| *No.* | *Name* | *Age* | *Sex* | *Operation* | *Diagnosis* | *Laboratory Report* | *Results* | *Comments* |
|---|---|---|---|---|---|---|---|---|
| 62 | SE | 51 | M | April 1912<br>Excision of part of upper lip for epithelioma | Epithelioma | Epithelioma, squamous cell | Well for *12 years;* no return | Died in Dec. 1924 of arteriosclerosis |
| 63 | GQ | 49 | M | March 1914<br>Excision of epulis of lower jaw | Epulis | Low grade malignant growth | Well for *17 years;* no return | Died in July 1931 of cirrhosis of liver |
| 64 | SP | 66 | M | December 1912<br>Excision of epulis of superior maxilla | Epulis | Small round cell sarcoma | Well for *14 years;* no return. | Died in Feb. 1926 of cancer of rectum |
| 65 | AE | 70 | F | December 1934<br>Excision of degenerating wart from tip of chin | Carcinoma | Squamous cell carcinoma | Well for *10 years;* no return | Last seen Sept. 1944 |
| 66 | CT | 45 | M | May 1915<br>Excision of epithelioma of nose | Epithelioma | Carcinomatous ulcer | Well for *19 years;* no return | Died in May 1935 of carcinoma of prostate |
| 67 | AC | 40 | M | February 1914<br>Excision of epithelioma of lower lip; ulceration size of 10 cent piece; no glands palpable | Epithelioma | Epithelioma | Well for *30 years;* no return | Last report Aug. 1944 |
| 68 | CD | 72 | M | July 1920<br>Wide excision of epithelioma in labial crease under right eye | Epithelioma | Epithelioma | Well for *18 years;* no return | Died in Jan. 1938 from heart attack |
| 69 | CC | 66 | M | March 1913<br>Excision of epithelioma of right side of nose; excision of epithelioma of abdominal wall | Epithelioma of nose and abdominal wall | Epithelioma | Well for *20 years;* no return | Died in July 1933 of fractured hip |
| 70 | MC | 57 | F | March 1907<br>Excision of epithelioma of forehead | Epithelioma | Epithelioma | Well for *7 years;* no return | Lost track of |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 71 | WA | 44 | F | August 1917<br>Excision of epithelioma of nose | Epithelioma | Epithelioma | Well for *10 years;* no return | Lost track of |
| 72 | CH | 50 | F. | December 1918<br>Excision of growth size of a hen's egg from left submaxillary gland | Sarcoma | Myxosarcoma | Well for *26 years;* no return | Last seen Aug. 1944 |
| 73 | JG | 52 | F | May 1924<br>Excision of epithelioma of face | Epithelioma | Epithelioma | Well for *20 years;* no return | Last report Sept. 1944 |
| 74 | AK | 76 | F | December 1916<br>Excision of carcinoma of upper jaw | Malignant epulis | Malignant epulis | Well for *19 years;* no return | Died in 1935 of acute pneumonia |
| 75 | CV | 70 | F | January 1920<br>Excision of growth of left temporal region | Epithelioma | Epithelioma | Well for *11 years;* no return | Lost track of |
| 76 | CV | 72 | M | January 1915<br>Excision of growth on face | Epithelioma | Squamous cell carcinoma | Well for *16 years;* no return | Died in March 1931 of old age |
| 77 | JL | 4 | M | April 1915<br>Excision of melanotic mole of face at outer canthus of eye | Early malignant growth | Melanoma of face showing areas of malignant growth | Well for *24 years;* no return | Last seen June 1939 |
| 78 | ON | 54 | M | February 1917<br>Excision of epithelioma of nose | Epithelioma | Basal cell epithelioma | Well for *7 years;* no return | Died in 1925; committed suicide |
| 79 | CM | 44 | M | November 1913<br>Excision of epithelioma of upper lip between wing of nose and angle of mouth | Epithelioma | Epithelioma | Well for *23 years;* no return | Died in July 1936; cause of death unknown |

| No. | Name | Age | Sex | Operation | Diagnosis | Laboratory Report | Results | Comments |
|---|---|---|---|---|---|---|---|---|
| 80 | HM | 75 | F | August 1925<br>Excision of epithelioma of face over zygoma | Epithelioma | Malignant degeneration | Well for *11 years;* no return | Last seen in 1936 |
| 81 | EL | 62 | M | November 1909<br>Excision of epithelioma of cheek and also nodule of neck on same side | Epithelioma | Squamous cell epithelioma | Well for *7 years;* no return | Lost track of |
| 82 | FP | 67 | F | March 1916<br>Excision of epitheliomatous ulcer of cheek | Epithelioma | Epithelioma, basal cell | Well for *12 years* | Died in July 1929 of diffuse cancer; apparently free of trouble for 12 years |
| 83 | IS | 45 | M | December 1912<br>Excision of epithelioma, size of a French pea, posterior to left ear over mastoid process | Epithelioma | Epithelioma | Well for *18 years;* no return | Lost track of since 1930 |
| | | | | September 1930<br>Excision of epithelioma of left temporal region; wound closed by flaps | Epithelioma | Carcinoma, basal cell | | |
| 84 | LP | 71 | F | November 1917<br>Excision of epithelioma of face, size of end of a pencil | Epithelioma | Basic degeneration of stroma | Well for *16 years;* no return | Died in January 1933 of heart attack |
| 85 | CEM | 65 | F | February 1938<br>Radical amputation of right breast, with removal of contents of right axilla; cutaneous growth of right thigh excised | Adenocarcinoma | Adenocarcinoma | August 1944, *6 years* later, patient perfectly well; no return | |
| | | | | | | Fibrosarcoma | No recurrence | |
| 86 | FF | 50 | F | 1908<br>Excision of epithelioma on eczematous base back of ear | Epithelioma and eczema | Epithelioma | Well for *23 years;* no return | Last seen in 1931 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 87 | EV | 54 | F | March 1921<br>Excision of melanotic mass of cheek, size of a dime | Early malignant growth | Melanotic papilloma with beginning epithelioma | Well for *23 years;* no return | **Last report March 1944** |
| 88 | JL | 65 | M | April 1909<br>Excision of epithelioma of left temporal region<br><br>June 1922<br>Excision of extensive growth of right ear | Epithelioma<br><br>Epithelioma | Epithelioma<br><br>Epithelioma, squamous cell | Well for *9 years*<br><br>No return in 1924 | **Radium off and on by a specialist from 1918 to 1922 for growth of forehead; died in 1924 of arteriosclerosis** |
| 89 | ED | 41 | M | March 1912<br>Excision of extensive ulcerating epithelioma of lower lip and submental glands, both sides involved | Epithelioma | Epithelioma of lip and carcinoma of glands | Well for *23 years;* no return | **Killed in an accident in Jan. 1935** |
| 90 | JL | 58 | M | May 1912<br>Excision of epithelioma of cheek, size of a dime | Epithelioma | Epithelioma, basal cell | Well for *32 years;* no return | **Is now 91 years old** |
| 91 | BJ | 54 | F | October 1934<br>Excision of large scar involving entire posterior aspect of both forearms with bilateral carcinomatous degeneration, result of x-ray burns<br><br>October 1934 (1 month later)<br>Plastic operation | Scar and malignant growth | Squamous cell carcinoma, typical of x-ray burns | Well for *10 years;* no return | **X-rays used for removal of superficial hair** |
| 92 | IC | 60 | F | August 1924<br>Excision of papillomatous ulcer on buttock<br><br>April 1928<br>Complete amputation of right breast for cancer | Cancer<br><br>Cancer | Papilloma in transition stage to squamous cell carcinoma<br><br>Scirrhous carcinoma; glands not involved | Well for *10 years* | **Died in Oct. 1934** |

| *No.* | *Name* | *Age* | *Sex* | *Operation* | *Diagnosis* | *Laboratory Report* | *Results* | *Comments* |
|---|---|---|---|---|---|---|---|---|
| 93 | KA | 64 | F | December 1913<br>Excision of small mass in skin on left side of neck; removal of small angioma under arm and also under breast | Epithelioma | Epithelioma, prickle cell<br><br>Angioma cavernosum | Well for *18 years;* no return | Died in 1931 of "old age" |
| 94 | JN | 37 | M | February 1912<br>Excision of cancer of lower lip and glands of neck; ulcer ¾ inch (1.9 cm.) wide | Malignant ulcer of tongue | Epithelioma, glands of neck not involved | Well for *7 years;* lost track of patient | Active, acute antisyphilitic treatment for many months; ulcer continued to extend; operation advised when I first saw him |
| 95 | MC | 62 | F | September 1925<br>Excision of malignant growth of face anterior to ear | Probable epithelioma | Mixed cell sarcoma | Well for *11 years;* no return | Died in March 1936; cause of death unknown |
| 96 | CA | 38 | F | March 1912<br>Excision of epithelioma of upper lip | Epithelioma | Epithelioma | Well for *21 years;* no return | Died in March 1933 of acute heart attack |
| 97 | RH | 51 | M | December 1927<br>Excision of growth of right wing of nose, small papilloma of neck and small mass of right ankle | Probable malignant growth<br><br>Papilloma; fibroma | Squamous cell carcinoma<br><br>Papilloma, non-malignant; fibroma | Well for *13 years;* no return | Died in June 1940 of heart attack; had been in excellent health |
| 98 | MW | 58 | M | April 1909<br>Excision of ulcerating epithelioma on side of nose | Epithelioma | Epithelioma | Well for *13 years;* no return | Last seen March 1922 |
| 99 | BS | 40 | M | March 1927<br>Excision of growth on tip of nose | Early malignant growth | Myxosarcoma | Well for *17 years;* no return | Last seen March 1944 |
| 100 | HD | 29 | M | June 1926<br>Excision of malignant growth of forearm | Carcinoma | Squamous cell carcinoma | Well for *18 years;* no return | Last seen April 1944 |

## СВОД

В прошлом разные болезни сгруппированные под именем рака были разделены по их происхождению, именно: сифилис, туберкулез и актиномикоз. Некоторые были вылечимы. Это показывает многосложность патологической картины рака, которая безусловно еще существует. Дальнейшие исследования могут помочь разрешить всю задачу.

Периодические физические исследования с удалением доброкачественных опухолей и раздраженных частей являются хорошими предотвратительными мерами.

Хотя в течение лет были провозглашены многие способы лечения, большинство было найдено безполезным, а популярность других уменьшается. Радий и рэнтгеновские лучи не обладают разыскивающей способностью. В выборе клеток они не различают между неопластической или нормальной тканью. Их действие, главным образом, прижигающее.

Хирургическое удаление является одним способом, который выдержал пробу времени. Автор думает, что при теперешнем состоянии нашего знания, интерес пациента обслуживается лучше всего посредством, во-первых, применения всего, что может дать хирургия, а затем только, добавляя все остальное: радиация, медикаменты, которые бы могли, по мнению хирурга, помочь полному выздоровлению или предотвращению рецедива.

Из всего широкого опыта автор уже раньше сделал статистический доклад о результатах хирургии при злокачественности грудной железы и матки. В этом же докладе автор дает отчет хирургии на других частях тела, наблюдение над которыми продолжалось от пяти до тридцати девяти лет. В каждом случае два патолога сделали исследование и подтвердили диагноз.

Хотя хирургия пока еще является лучшим способом, автор надеется, что прогресс химотерапии, биотерапии, физиологической химии, изучение гормонов, исследование недостатка витаминов, и т. д., сумеют разрешить проблему рака до такой степени, что хирургия сделается лишней.

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## ACTIVITIES OF BOARD OF TRUSTEES

*(Continued from page 232)*

Section 5

*Masters*

The Master's degree shall correspond to the honorary degree of most organizations, and is to be conferred only in recognition of some great and outstanding accomplishment in surgery, whereby humanity has benefited. The degree of Fellow or Master may be bestowed on persons living or dead, whether members of the International College of Surgeons or not.

Section 6

*Emeritus*

The title of Emeritus shall be conferred upon members of the International College of Surgeons in recognition of long and distinguished service as an officer of the College.

Section 7

*Regents*

1. *National Regents* shall be those who have been appointed National Heads of their respective countries; they shall organize and direct Territorial Regents and Specialty Regents appointed in their respective territories.

2. *Territorial Regents* shall be those who have been appointed to organize and direct the activities of the College in their appointed territories.

3. *Specialty Regents* shall be those whose duty it is to supervise progress and organize their respective specialties in their appointed territory. Their activities shall be submitted to the Territorial Regents for approval.

4. *National Regents* and *Specialty Regents* shall be elected by the authorized officers of the Chapter of each respective country. If no Chapter is yet constituted, the membership of the country shall choose its officers.

Section 8

*Diplomas*

1. Any candidate who has been duly elected to any class of membership and who has complied with his financial obligation to the College shall receive a diploma of membership in the College.

*(Continued on page 289)*

# IN MEMORIAM

## JOHN J. LOOMIS, M.D., F.I.C.S.

Dr. John J. Loomis died on March 21 in Durango, Colo., where he had moved a year previously, after ill health forced him to retire from his practice in Lincoln, Neb.

He was born in Clinton, Mass., in 1893 and moved to Hay Springs, Neb., when he was 9 years old. He attended the University of Chicago and later graduated from Loyola University School of Medicine. After internship in St. Mary of Nazareth Hospital, Chicago, he did postgraduate work in Dublin, Ireland, and in Vienna, Austria.

For about twenty-five years during his surgical practice in Lincoln, Neb., he was closely associated with Charles H. Arnold, F.I.C.S. He was chairman of the department of obstetrics at Bryan Memorial Hospital in Lincoln and on the staff of St. Elizabeth's Hospital.

Dr. Loomis was a member of the Nebraska State Medical Society and of the American Medical Association. He was one of the first Fellows of the International College of Surgeons and in 1936 was appointed a Specialty Regent in Obstetrics and Gynecology.

John J. Loomis
1893–1945

Dr. Loomis is survived by his wife. His death was a shock both to his friends in Nebraska and to his associates in the International College of Surgeons.

## LEMUEL WEYHER KORNEGAY, M.D., F.I.C.S.

Dr. Lemuel W. Kornegay died suddenly on Dec. 18, 1944, at the age of 64.

After preliminary education in the public schools of his birthplace, Mount Olive, N. C., he attended Davidson College and the North Carolina Medical College and served an internship at St. Francis' Hospital, Jersey City, N. J. He did postgraduate work at the New York Polyclinic Medical School and Hospital and at the New York Post-Graduate Medical School and Hospital. He participated in the first International Postgraduate Tour to Europe, in 1925.

During his years of practice of general surgery in Rocky Mount, N. C., where he died, he was chief surgeon at the Rocky Mount Sanatorium.

Several case reports and general articles on surgical subjects by Dr. Kornegay were published in the proceedings of his local and state medical societies and in the North Carolina State Medical Journal.

Dr. Kornegay was a member of the North Carolina State Medical Society, the Southern Medical Association and the American Medical Association. He was made a Fellow of the International College of Surgeons in 1942 and was a loyal member of this organization.

# *Editorials*

## Medicine in a Mad World

TODAY the world is mad. Vibrating, clanging rhythms of forces of evil have been loosed, and there is no corner of the earth from which the blare of hatred does not echo and re-echo. Now that the rhythms begin to break, now that the evil music loses its force, it is well to remember how nearly they have engulfed the world. It is well to remember that their work of dementing mankind might have been complete except for the answering, conquering rhythms ringing in the hearts of free men, and that it still may become complete if these combative rhythms are not kept alive.

The service which physicians and their affiliates in the nursing and hospital professions have gladly proffered during the military struggle has gone far beyond the requirements which their governments have laid upon them. This service has meant the voluntary sacrifice of material profits. It has meant the even greater sacrifice which comes when young and promising scientists leave the laboratories in which they might have enriched the medical knowledge of the world, to go out into combat areas. It has meant the assumption of prodigious burdens by older men who have reached years in which they should reasonably expect to enjoy the fruits of their toil. Careful planning has gone into the effort, planning directed to the most effective use of every medical and surgical resource available, so that the needs of the battlefields might be met and the needs of the home front not too sorely neglected.

The role of the physician in war is always somewhat anomalous. In a world where death and destruction have become the acknowledged objectives, he continues to serve life and to carry forward his work of conservation which knows no distinction between enemy and friend. It seems anomalous, moreover, that periods of gigantic warfare should be also periods of gigantic advances in the arts of healing.

In the first World War, plastic surgery was reborn as it undertook the hitherto impossible in the restoration of mutilated bodies. Orthopedic surgery, likewise, had its greatest period of development during the war years. In the decades of peace that followed, both of these branches of surgery continued to win brilliant victories over deformity and mutilations of accident and disease. Under the necessity of sparing the strength of fighting personnel at the front line and the strength of accessory personnel, such as nurses, the giving of direct blood transfusions to the wounded had to be curtailed, and the use of canned blood was given a thorough, fundamental adaptation on a grand scale. Even the laymen know of the life-saving use of preserved blood and the development of blood bank

Based on an address given at a combined meeting of the Tennessee Division of the International College of Surgeons and the Knox County Medical Society, June 8, 1945.

service that followed the wartime pioneering in this field. Out of the first World War came these and many other advancements in surgery. Today, on battlefields all over the world, physicians and nurses are performing miracles under the pressure of necessity. Surgeons, operating in grossly contaminated fields, perform major emergency operations, using the new drugs, choosing suture material and technics to avoid postoperative complications, to allow very early transportation of patients back from the battlefront, under operative and transportation conditions far from the ideal—doing their emergency work so as to give the reconstructive surgeon the best opportunity for later restorative work.

Hammered out on the forge of Mars, such technics become the tools for the amelioration of pain and the conquest of death in peacetime also.

For one who has been practicing surgery for a long time, it is breath taking to stop and realize how swift and revolutionary have been the advances within his own lifetime. It is even more breath taking to think in terms of the lifetime of a country like the United States. A little more than a century and a half ago, this was a newborn nation. In that day, surgery was practically a sealed book. Pasteur, Koch, Wassermann and Curie were unknown names. Jenner and Lister were considered as rather dangerous crackpots. A woolen sock was considered a good cure for a sore throat. Old wives' potions were recommended for everything from ingrown toenails to catching a husband.

In those days, too, a hospital was a place to die in. "Abandon hope, all ye who enter here" might well have been the inscription over the door. For paupers who had no choice the doors opened into a place of hopeless doom. No one would have dared suggest that the gentry, who could pay for medical care, should risk their lives and their chances of recovery by going to a hospital. It is strange to remember this today, when the first thought of rich and poor alike when serious illness strikes is to get the patient as quickly as possible to the nearest hospital so that he may have the advantage of the best medical and surgical care.

Some of the most significant changes which the surgeons of today have watched have occurred in the realm of interrelationships between the various branches of the medical profession. There was a day, not so very far in the past, when medical men thought that the surgeon's job of discovering and extirpating diseased tissues and organs was almost wholly independent of the therapeutist's work. Today this attitude has happily been abandoned. Cognizance has come that medical, surgical, chemotherapeutic and electrotherapeutic skills must be as closely coordinated in the art and science of healing as are the functions of the body toward which that art is directed.

Interdependence is the key word which not only describes medical and surgical tendencies today but also points the way for future development. And because interdependence is also the key word in the International College of Surgeons, the role which we are called upon to play in the days ahead is both great and solemn.

The needs of the world today cannot be considered on a purely national basis. The same forces of evil which have burst forth in blaring, pounding rhythms in some areas of the world are present in other areas as muted discords or as echoes. The massing of the military and other forces of certain nations against those of other nations, even with the

achievement of supremacy by one group, cannot solve all the problems. Clear-thinking, democratic, humanitarian people in all fields of endeavor must unite on an international basis in an attempt to deal with the specific effects of the war and with the physical and mental ailments of all humanity.

We in the Americas are only beginning to realize the extent to which the devastation of war has crippled our brother surgeons in lands less fortunate than ours. We are only now realizing the meaning of the destruction which has laid waste hospitals, apothecaries, schools and laboratories, has deprived the world of healers fallen too young on battlefields, and has left in its wake poverty, both material and spiritual. These only patient and earnest practice of the art of cooperation and cultivation of the spirit of brotherhood can alleviate.

For an international organization such as ours there are special problems inherent in the present and casting a shadow on the future. We know that in the Nazi-ridden lands the holy profession of healing has been poisoned and perverted. We read with horror of science and medical art serving as handmaids to brutality and crime. The bestiality of mass murder becomes the more intolerable as we know that it has called to its service the skills and knowledge which should have been dedicated to the service of life.

We know that there are physicians and surgeons in the world whose bloody hands can never again clasp ours in brotherhood. We know that we must steel ourselves to stern dealing with them, even with those who in a happier world seemed to us to possess skills and knowledge which our profession needed. But it is not enough to bar the gates against such men turned monsters. Somehow we must find a way to reach those young men, and older men too, whose minds are unpoisoned with Nazism and fascism, whose hearts are in their profession, whose hands and spirits have the skills which can rebuild in their own lands the true temples of Aesculapius.

Our "international passports," opening the way for young surgeons to receive counsel and instruction of their peers all over the world, are going to be of special significance in the days ahead. We must see to it that these passports are fully honored, that no young student searching for the scientific knowledge which has been all but rooted out in his own land asks help from us in vain. We must plan and work so that the channels of communication which make it possible for the physicians of the world to present a united front against disease, suffering, hypocrisy and intolerance are kept open, improved, broadened. We in the more fortunate countries must learn generosity, must find joy in giving rather than in gaining for ourselves prestige and power.

The challenge of the future to the medical profession is apparent even in the more fortunate lands. In the United States, 40 per cent of the youth called up for military service were found unfit to serve. In this same country, in the days when every man hour of labor counted so desperately, workers lost 41 times as many days because of illness—just the common illness which one takes as a matter of course—than were lost because of strikes and lockouts. We have learned to conquer diseases like typhoid, diphtheria and even pneumonia. But there are chronic diseases which take their regular toll in life and in energy which are still unbeaten enemies to human welfare.

The challenge is here for the healers of mankind. Frontiers still remain to be

pushed forward by a new generation of pioneers. The future of medicine and surgery is yet more full of possibilities than its past. But who will meet the challenge, explore the wildernesses, carry the torch of medical knowledge into the still dark corners of the earth?

This is not just a rhetorical question. It is one which troubles many physicians today. On the home front the responsibilities of carrying forward medical knowledge now rest upon the shoulders of those who were too old to go to war or too young to have acquired the medical and surgical training needed in the armed forces. When the war ends, many of the physicians and surgeons now on the fighting fronts will come home able to resume their work where they left off, with new skills and new knowledge learned in the battle. But many will not come back. Many will come with physical disabilities which will prevent their effective practice of their chosen profession. Will there be enough younger men to fill the gaps in the ranks? Necessities of war have cut deep into the normal program of training whereby the medical forces of the nations are replenished from generation to generation. Will that curtailment result in impairment of medical service in the years immediately ahead?

The organized Chapters of the International College of Surgeons are peculiarly well prepared to help in solving this problem. Because we are a "college," an institution in which the process of learning and sharing knowledge is perpetual, rather than a society for the enhancement of the prestige of its members, we can help the surgical profession to replenish itself.

There is a call to war now which is just as clear as that of a few years ago. But the warfare it presages is clean and good and worthy of devotion—warfare on want and physical suffering, warfare on intolerance and hate and injustice, warfare on the causes of war.

There is no more important task today than this of reconstructing the medical profession of the world to meet the present and future needs of humanity. There is probably no organization potentially able to contribute more to this task in the surgical field than the International College of Surgeons. How can we best respond?

MAX THOREK

# Medical Progress and Problems in China

TWO issues of the Chinese Medical Journal* that came to the editorial offices recently are full of information about the progress of medical care and medical education in China and about the present and future needs of that country.

Both issues have several articles on vitamin deficiencies and deficiency diseases. An interesting report on prevention and treatment of deficiency diseases in general includes tables showing the vitamin content of foods generally obtainable in China and not too expensive for the average budget.

The ingenuity of physicians in devising substitutes for hard-to-obtain drugs is shown by the reports of the use of

* January-March and April-June 1944. Since January 1943 the Chinese Medical Journal has been published in Washington, D. C., as well as in Shanghai.

honey (as a substitute for the formerly used cod liver oil) in ointments for the treatment of chilblains, nonspecific ulcers and small wounds. Methods of treating opium addiction are considered, and there is a report on the present status of studies on Chinese antimalarial drugs. A long and carefully illustrated article on the roentgenologic anatomy of the position of the coils of the normal small intestine shows that research continues.

Considering the difficulties of getting material from China, not to speak of the complications involved in engaging in research and writing in that harassed country, the editors and the authors are to be congratulated on having presented such sound and timely scientific articles.

The official reports and editorials in these issues are equally, if not more, interesting.

The January-March issue gives reports on the history, present status and organization of the Medical College of National Central University and of the College of Medicine and Dentistry of West China Union University, as well as a detailed report on the several Emergency Medical Service Training Schools. The latter were established by the Army Medical Service in order to provide training for still unqualified personnel who had had to be taken into the service. A policy of "stage medical education" provides for alternating periods of study and of active service. The April-June issue presents a similar report on the National Kweiyang Medical College. Despite the shortage of personnel and the necessity for moving institutions from one place to another, sometimes with construction of new buildings, sometimes with sharing of buildings and equipment by two or more institutions, medical education of high standards has continued.

An original article in the January-March issue deals with an investigation of infant mortality and its causes in Chengtu, and the April-June issue has a report of maternity and child health work there, under the auspices of the Szechuen Provincial Health Administration. As is pointed out in an editorial, these reports show that "even in these difficult times of war and inflation public health services in Free China are being developed. To Dr. C. C. Ch'en, the provincial health commissioner, must be given the credit, in four wartime years, of increasing the number of hsien (county) health centers in the province from eight to ninety-six."

We learn that the Chinese Medical Association has been able to function to some extent in Shanghai and that under the name "China Medical Publication Bureau" it has been able to maintain some of its publications, including the Shanghai edition of the Chinese Medical Journal and the National Health News.

These reports and news items may well be read as supplementary material to the book "China's Health Problems," * by Dr. Szeming Sze, General Secretary of the Chinese Medical Association and one of the editors of the Chinese Medical Journal. This small volume presents briefly the basic problems of public health and medical care in China and outlines the proposed and actual organization of the country's resources for dealing with them. The third edition has been almost entirely rewritten and contains new sections on the antituberculosis, antivenereal and antileprosy movements, on birth control and on nutrition.

The editorial in the January-March issue of the Chinese Medical Journal is

* China's Health Problems. Szeming Sze. Chinese Medical Association, Washington, D. C., 1944, Price, $1.00.

an address made at the first meeting of the Council of the United Nations Relief and Rehabilitation Administration by the other editor of the journal, Dr. J. Heng Liu, as a member of the Chinese Delegation. Because it presents a significant and challenging situation more clearly than could any abstract or rewording of ours, we quote the editorial in its entirety, by permission of Dr. Liu:

"Of the United Nations, China was the first to fight and to be invaded by the aggressor. Certain provinces are entirely and others partially occupied by the enemy. Medical relief and rehabilitation on a huge scale will be necessary because, after seven or eight years of war, destitution, starvation and epidemics are inevitable.

"China has never had a competent health service, in the modern sense of the term. What was started in Nanking in 1929 developed rapidly so that the foundations of a modern public health service were laid. But a very small percentage of the population could be reached and vast problems in the public health field, e.g., sanitation, control of epidemics, infant and maternal welfare, general medical care, and social diseases were barely touched upon.

"However, a model program was worked out for health organizations in the provinces, cities and rural districts so that a minimal service could be given to the people. Encouragement is given by the National Health Administration for the establishment of local health centers in the form of grants-in-aid, loan of personnel, and in the training of workers. New medical institutions were being established, and the progress, until war broke out in 1937, was most encouraging.

"The war has not interrupted this public health movement, but the cities and provinces which had established the new services were lost to the enemy, who destroyed the buildings or discontinued the services. Medical colleges and hospitals, both governmental and private, have suffered the same fate. At the same time new institutions and services have since grown up in Free China, so that in 1942 almost two-thirds of the hsiens (or districts) have health centers. Compared with 1937, this is most encouraging, but due to the blockade and on account of shortage of personnel, these centers are of the flimsiest kind, in buildings, equipment, supplies and personnel.

"The Chinese Government is determined to carry out a program of state medicine which should particularly be applicable in China. Even before the war the ratio of doctors to population was 1 to 50,000. Our medical colleges, with only two or three exceptions, have had to be moved thousands of miles to new quarters, where with the small amount of equipment it is impossible for them to turn out any large numbers of graduates. The army has only a fraction of the graduate doctors it requires and the shortage of manpower in the medical and public health field, while quite an acute problem now, will remain so when any work in Relief and Rehabilitation is started.

"Large numbers of new medical and public health institutions will have to be established for providing medical care, to carry on preventive work and for training. Completely new sets of equipment and supplies will have to be provided. There will be included under this category medical and dental colleges, training schools for pharmacists, nurses, midwives, sanitary engineers and inspectors, hospitals and dispensaries, laboratories for diagnosis and for the production of pharmaceutical and biological products, sanatoria for special diseases such as tuberculosis, leprosy, addiction to narcotics, etc. The reference to narcotics is important, because while addiction is now entirely controlled in Free China, the enemy has been doing everything possible to make addicts of the entire population in the occupied areas.

"In connection with sanitation, China has always been far behind the times. It is premature to mention permanent water and sewage systems for many of the larger cities but wherever epidemic disease control measures require them, the minimum machinery, equipment and materials to improve sanitation will have to be provided.

"The provision of shelter, clothing and food will prevent exposure and starvation. Deficiency diseases will be a serious problem for a long time to come and will have to be controlled or prevented with the provision of suitable foods and nutrients.

"Special epidemic and endemic diseases will have to be fought with appropriate measures, requiring especially trained personnel. Bacteriologists, malariologists, parasitologists, entomologists, nutritionists and other specialists will be needed in large numbers.

"China is not, and never was, a country in which medical equipment, apparatus, instruments, drugs and chemicals are produced. Practically all will have to be imported until the time comes when the few small factories in Shanghai and the other coastal cities can be restored and very much expanded. For hospital buildings, large numbers of pre-fabricated buildings will have to be imported and set up in the liberated areas to take care of the emergency. In supplying these needs UNRRA can be of the greatest assistance to the Chinese health authorities in accomplishing their objects. In addition to supplies, the problem of personnel training seems to be most urgent, because the field work entailed in the program of the Chinese Government will require many times the number available. Unless a large number of Chinese can be trained immediately, China will be obliged to engage the services of many foreign workers, who, on account of language difficulties and comparatively poor living conditions, will not be absolutely satisfactory. In this program of training, either in China or abroad, it is hoped the UNRRA will also be of assistance."

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## ACTIVITIES OF BOARD OF TRUSTEES

*(Continued from page 281)*

2. The College diploma shall be signed by the International President, by the International General Secretary, and by the National President of the Chapter to which the recipient belongs. If his country does not have an organized Chapter, then the International President-Elect shall sign the diploma in lieu of the National President.

3. The diploma shall also carry the seal of the International College of Surgeons.

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VI. That the various omissions through printer's errors in the Constitution and By-Laws of the International College of Surgeons, as outlined by the attorney for the College, be corrected, and its terminology clarified throughout.

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VII. That the words " any dominion, protectorate, or other autonomous outlying possession of any given country " be inserted and incorporated into Article IX, Paragraphs 1 and 2, of the By-Laws of the International College of Surgeons.

# NEWS AND ANNOUNCEMENTS

## UNITED STATES

### CHANGES OF DESIGNATION OF MEMBERS

The designations of grades of members of the United States Chapter have been changed to the following, with the approval of the International Board of Trustees:

1. Matriculate
2. Affiliate (this to take the place of the former "Associate Member")
3. Associate (this to take the place of the former "Member")
4. Fellow

These designations are now in effect, and members will be designated accordingly.

The joint meeting of the **Tennessee Division** of the International College of Surgeons and the Knox County Medical Society which was held in Knoxville, Tenn., on **June 8, 1945** (announced in the March-April issue of the *Journal*), was well attended and successful. Several of the papers presented at this meeting will be published in the *Journal*.

The **American Society of Anesthesiologists, Inc.**, is sponsoring an **"Anesthesia Essay Contest."** A prize of $100 is offered for the best original essay, not published previously, on some phase of anesthesiology or on a subject closely related to it. Information concerning the contest may be obtained by writing either to Dr. R. Charles Adams, Mayo Clinic, Rochester, Minn., or to Dr. McKinnie L. Phelps, 745 Fifth Avenue, New York 22, N. Y.

Dr. E. Forrest Boyd, Secretary of the **Los Angeles Guild** of the International College of Surgeons, has sent the following report of a meeting on **April 26, 1945**:

Thirty-three members and guests of the Los Angeles Guild of the International College of Surgeons enjoyed an evening of fellowship, partook of a wartime banquet tinged with pre-war flavors (planned by Dr. Felix Cunha) and listened to a scholarly and enlightened address by Dr. Linus Pauling, Head of the Department of Chemistry, California Institute of Technology, Pasadena, and also Professor of Chemistry at the same institution. Dr. Pauling has held and is at the present time in many responsible positions, some of them of international nature. He was appointed by President Roosevelt as a member of the Consul Mission for planning and guidance of post-war medical organization and research.

Dr. Pauling's topic was "Recent Advances in the Realm of Medical Discoveries." He touched upon chemical, physiologic, biologic and surgical fields and dwelt on the international aspects of medical, social, physical and biological science and the far-reaching effects of the practice of medicine and surgery. He considered the present and future financial problems, not only of individual medical students, scientists and research laboratories but also of medical schools and other institutions of scientific learning. He expressed the opinion that the advancement of the sciences in all the related fields is of tremendous importance to the future health, progress and prosperity of the world, and therefore that the economic future of those involved in those fields must be assured and kept out of the realm of politics or other encumbering alliances that would end to stifle

free efforts to make further progress. The answers were not absolutely clear to the speaker, but his comments provoked valuable discussion.

Everyone left the meeting conscious of a deeper obligation to society and to the practice of medicine and surgery and challenged with the future possibilities of the International College of Surgeons.

The **Wisconsin Study Guild** of the International College of Surgeons held a meeting at the University Club of Milwaukee on **March 28, 1945,** with Dr. W. J. Carson, F.I.C.S., Regent for Wisconsin, presiding. The scientific program following the dinner consisted of a symposium of ten minute reports on the use of penicillin in the following fields, presented by the following men: ophthalmology, S. G. Higgins, M.D., F.I.C.S.; oral surgery, M. N. Federspiel, M.D., D.D.S., F.A.C.S.; orthopedic surgery, L. D. Smith, M.D., F.A.C.S., F.I.C.S.; obstetric surgery, R. W. Roethke, M.D., F.I.C.S.; urology, W. M. Kearns, M.D., F.A.C.S., F.I.C.S.; abdominal surgery, V. F. Marshall, M.D., F.A.C.S., F.I.C.S. The papers read in this symposium will appear in an early issue of the *Journal.*

### MEXICO

(Several items of interest appear in the Spanish section.)

**For information about membership in the International College of Surgeons and other matters pertaining thereto, address the International General Secretary, International College of Surgeons, 850 W. Irving Park Road, Chicago 13, Illinois. Inquiries concerning the United States Chapter should be addressed to Mr. Ralph E. Osborne, The Drake, 1512 Spruce St., Philadelphia, Pa.**

Spanish-speaking surgeons in the United States as well as in Latin America are invited to submit material (original articles, feature material or news) for the Sección en Español (Spanish Section). Contributions may be sent either to one of the Associate Editors for this section or to the general editorial offices in Chicago.

# NEW BOOKS

**Rudolf Nissen's Duodenal and Jejunal Peptic Ulcer: Technic of Resection**[1] is a small volume with a big appeal. Dr. Owen H. Wangensteen, who wrote the foreword, hit the proverbial nail on the head when he wrote: "Dr. Rudolf Nissen, steeped in the tradition of a long and thorough period of training in surgery and schooled in the exacting technique of ulcer surgery, is well qualified to write on this subject. His contributions to this and other phases of surgery are well known."

The work is divided into two parts, one on duodenal and one on jejunal ulcer, and is full of worth while and instructive material. The closure of the duodenal stump being of such major importance, Dr. Nissen has described the technic which he first published in 1932. Among others who have accepted this method with slight modification are von Haberer, Mandl, Doberer, R. Graham and Wangensteen.

The section on jejunal ulcer is of the same high order as the preceding section. In commenting on Dr. Lahey's technic of management of gastrojejunocolic fistula, Dr. Nissen "raises the question whether it is necessary or even desirable to resect the fistulous section of colon." "Our own experience," he says, "has been on the negative side."

The frequent ulcerative conditions of the gastrointestinal tract still have bewildering aspects and are of grave import. The mature and expert opinion of Dr. Nissen, whose surgical accomplishments are recognized throughout the contemporary surgical world, is worth having. This book is a fine addition to his already large collection of writings on this subject.

The illustrations, which are excellent, were contributed by Mrs. Nissen.

The **Michigan State Medical Society** and the **Michigan Department of Health** have together published a volume entitled **Cancer—A Manual for Physicians,**[2] which embodies contributions from thirty-eight leaders in the field of cancer, who express differing, and in some instances conflicting, views.

Useful information is marred by affirmations still in the conjectural field, and some already proved untrue. An example of important misstatement is that benign tumors rarely become malignant. This is contrary to the reviewer's experience and to the ideas stressed in campaigns for the public against cancer. There is only brief mention in one place that cancer may be a number of diseases. The greatest field of advance—that of recognition of the multiplex pathologic nature of cancer—is omitted entirely; moreover, no mention is made of the fact that leprosy, tuberculosis, actinomycosis, blastomycosis, syphilis and other diseases have through the centuries been separated from what was formerly called cancer and have come to be recognized and treated as entities, largely successfully. In this book Hodgkin's disease is classified as cancer, although it has been proved by the work at Harvard and elsewhere to be an infective granuloma. The conclusions of many leaders, including Bloodgood, Ewing, Harrington, Tyzzer and Bashford, have been overlooked.

Valuable reference is made to the dangers of removing tissue for biopsy. However, the volume contains a statement that there is no experimental or clinical evidence to indicate that metastatic spread of cancer is an important consideration. This despite the fact that there is abundant recorded proof that such is a danger! Hemophilia is stressed as a hazard in obtaining a specimen for biopsy. Why not suggest making laboratory tests for the coagu-

[1] Duodenal and Jejunal Peptic Ulcer: Technic of Resection. Rudolf Nissen. Grune & Stratton, New York, 1945.

[2] Cancer—A Manual for Physicians. Published jointly by Michigan State Medical Society and Michigan Department of Health, 1944.

lation time, just as one makes serologic tests for syphilis in cases of suspected cancer?

Fortunately, the contributors show a conservatism in their claims regarding radiation treatment.

There is much good in the book despite the foregoing criticisms offered as constructive suggestions.

The arrangement of **Thomas Orr's Operations of General Surgery**[3] will be of value to the student and the general surgeon alike. Certain chapters are plethoric with major surgical procedures, but regretably such common operations as tonsillectomy are not included in the work. The text is necessarily abbreviated, and justly so, for if it were augmented the volume would be unwieldy. The reputation of Dr. Orr, his mature experience and his keen desire to contribute from his storehouse of practical knowledge the crystallization of what he considers would be of value to his surgical audience make this a praiseworthy and well accomplished work.

A colored plate and numerous illustrations make the second edition of **R. J. McNeill Love's Minor Surgery**[4] a most attractive volume. It has been thoroughly revised to bring it up to date. An introductory chapter on examination of the patient stresses the importance of an accurate history and careful inspection of the patient. Antiseptics used in antisepsis and asepsis are listed, and the necessary preoperative and postoperative precautions are emphasized. Wounds are discussed under such general headings as wounds of the thorax, of the abdomen and of the head, hematoma of the scalp and ear, "black eye," burns, bites, foreign bodies and sports injuries. Remaining chapters deal with: the vascular system; cellulitis and abscess; bandaging, slings, knots and strapping; hernia; minor surgical operations; genitourinary surgery; the eye and the ear; anesthetics; fractures and dislocations. The index and the handy format, the book being of a size to fit into the pocket, make this splendid little volume particularly useful to the surgeon on a battlefield, as well as a valuable addition to the library of the general practitioner called upon to face emergencies calling for minor surgery.

In the midst of the alarums of war a volume like **Solomon Kagan's Modern Medical World**[5] offers welcome respite, for here on the humanitarian front are mustered the captains of another war, and of another day, to which the world may soon return. Only a medical biographer with insight and broad vision could have authored this book, for, unlike many, Dr. Kagan abjures parochialism and ranges into new and unheralded areas, in America and abroad.

In a neat volume of well over 200 pages, Dr. Kagan presents 291 portraits and sketches of physicians who have contributed something of importance to the science of medicine. The great physicians whose accomplishments and whose features are familiar to the American public through frequent reproduction are not stressed; rather, the emphasis has been placed on men of achievement whose portraits have rarely if ever appeared in serious compilations.

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[3] Operations of General Surgery. Thomas G. Orr. W. B. Saunders Co., Philadelphia, 1944. Price $10.

[4] Minor Surgery. R. J. McNeill Love. H. K. Lewis & Co., Ltd., London, 1944. Price 15 s. net.

[5] The Modern Medical World: Portraits and Biographical Sketches of Distinguished Men in Medicine. Solomon R. Kagan, Boston Medico-Historical Press, Boston, 1945. Price $6.00.

About one fifth of the men portrayed on these pages have never before been given recognition in American medical biographies. Approximately one half of the portraits have been made directly from photographs never before published.

The biographies are arranged alphabetically under the various specialities. But on every page the portrait becomes the center of interest. It is often said that physicians grow to resemble one another—that a doctor can always be spotted by his characteristic mien and expression. An analytic person is therefore tempted to seek out and define the common denominators in these likenesses. Any reader may draw inspiration from a contemplation of the lineaments of a productive leader in medicine, as he scans the accompanying sketch. The character, as presented in the portrait, enlightens the accomplishment, so that one senses the advantage of meeting his subject face to face.

These sketches are marvels of condensation. Dr. Kagan, pupil as well as biographer of Dr. Fielding H. Garrison in the field of medical history, believes with Garrison that brevity is the soul of biography. Yet this volume presents much historical information not previously recorded. It may be considered, for the time being, at least, a supplement to the fourth and last edition of Garrison's History of Medicine, published in 1929.

The style is terse and lively, well adapted to the technic. The volume is presentable and attractive, handy in size, clear of print. Fortunately the lapses of the proof-reader are few, but there is an occasional evidence of slip-up, such as "New York Village" (page 15) and misspelled words, like Valperaiso (page 176), Fieldnig (page 208) and scoial (page 211). Rarely a portrait, reproduced from an old or worn electrotype, is below the average high standard. Dr. W. B. Cannon's picture (page 189), while good, would be more characteristic in full face.

This volume maintains the fine level of Dr. Kagan's previous work. It is worthy of gracing the book shelves of any person interested in the cultural and social aspects of modern medicine; it is easy and enlightening reading for the layman, as well as for physicians. It deserves a handy place in every library.

**John A. Kolmer's** book on **Penicillin Therapy**[6] appears only four years after Florey and his associates first succeeded in isolating penicillin in relatively pure form and revealed its remarkable effects in the treatment of various experimental bacterial infections of mice. In these four years a vast literature has been accumulated on the methods of production, properties, standardization, methods of administration, dosage and therapeutic effectiveness of penicillin in man, both in the prevention and in the treatment of numerous diseases caused by various pathogenic organisms, bacteria and spirochetes. The author of this little volume has set these data down in book form, thus making all of the information easily available.

From the standpoint of the physician, it may be said that the virtue of completeness is the single fault of this valuable book. A considerable portion of its 285 pages is devoted to the methods and factors involved in the production of penicillin, its physical and chemical properties, its pharmacology and the methods for its detection and assaying—all of which are highly important to the laboratory worker but of little more than academic interest to the bedside practitioner.

Nevertheless the active physician will find this a most useful source of information on penicillin therapy if he will concentrate on the chapters on treatment, in which numerous useful therapeutic suggestions and informational data are succinctly presented.

Considerable attention also is given to the consideration of tyrothricin, gramicidin and other antibiotics which are still in the experimental stage of development.

The volume is a timely and useful one and should go far in acquainting physicians with the uses and limitations of this remarkable compound. Both author and publisher should be commended.

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[6] Penicillin Therapy Including Tyrothricin and Other Antibiotic Therapy. John A. Kolmer. New York, D. Appleton-Century Company, 1945.

In **The Chemistry and Pharmacy of Vegetable Drugs**[7] **Noel L. Allport** deals with the derivation and properties of most of the principal vegetable drugs in an orderly, scientific and interesting fashion. Now and then an intriguing detour into the history of a certain drug adds zest and sustains the reader's interest. After reading the book, one feels better acquainted with the drugs reviewed and is impressed by the fact that man has always had a comparatively ample supply of medicaments about him in nature since the dawn of history.

One is impressed by the fact that in spite of the rapid march of the hormones and vitamins upon the pharmaceutic horizon the principal vegetable drugs are not likely to be readily displaced, for as yet no complete substitutes have been found for them.

It should not be assumed that the vegetable kingdom has been completely explored or exhausted, and one is reminded that recent confirmatory observations of earlier work have been made concerning the value of the fruits of hawthorn for the treatment of patients with cardiac lesions or high blood pressure. Another valuable bit of information has been that relative to the use of the alkaloids derived from the plants of the genus Erythina in the treatment of complications following the shock treatment of schizophrenia and other mental diseases. The latest and most noteworthy contribution of the vegetable kingdom is penicillin, which is formed in cultures of the mould Penicillium notatum.

The author concludes as follows: ". . . although modern pharmacology has done much to systematize our knowledge of therapeutics, the fact remains that so far as vegetable drugs are concerned, it is still largely empirical—and so after considering all the advances which are taking place in materia medica, there would seem to be no valid grounds for supposing that the use of vegetable drugs will ever be superseded."

The book would be an interesting and helpful source of information to any student of materia medica, chemistry or medicine, especially in the preliminary or introductory phases of such work, and later for quick but brief references.

**Beardwood and Kelly** are to be congratulated upon the fascinating, practical and yet scientific manner in which, in their **Simplified Dietetic Management,**[8] they have compressed a compendium of facts into what really amounts to a handbook. It should appeal to every physician dealing with diabetes and associated problems and complications, for, while it is of infinite value to the patient, the premise is that the doctor must determine the patient's needs in carbohydrate, protein and fat at all times. With that information in the hands of the patient and with the "unit method" charts available, the patient is able to regulate his diet from the variety and calorie standpoint.

For the convenience of the patient, the unit values are given in household measures, metric and avoirdupois systems. Here again the authors are careful to warn the patient to be accurate by first comparing household measures with actual measurements.

The authors' classification of "units" is as follows: "Group A consists essentially of the plant foods—fruits, vegetables, cereals, and cereal products, while Group B consists of the animal foods—meats, eggs, cheese, fish, etc. Group C contains both plant and animal foods. Each C unit is equivalent to one unit of Group A and one unit of Group B."

By definition each "A" unit contains 5 Gm. of carbohydrate and 1 Gm. of protein, with a caloric value of 24. By definition each "B" unit contains 5 Gm. of protein and 10 Gm. of fat, with a caloric value of 110. By definition, each "C" unit is equivalent to 1 unit of Group A plus 1 of group B, with a caloric value of 134.

With the physician's determination of the patient's requirement in grams of carbohydrate, protein and fat, it is easy to convert it into units and then to refer to the classi-

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[7] The Chemistry and Pharmacy of Vegetable Drugs. Noel L. Allport. Chemical Publishing Company, Inc., Brooklyn, N. Y., 1944.

[8] Simplified Diabetic Management. Fourth Edition. J. T. Beardwood Jr. and K. T. Kelly. J. B. Lippincott Company, Philadelphia, 1944.

fied food charts for the actual diet. A and B foods must be included in each meal, and the units may be selected from groups A, B or C, but there must be no exchange of foods in groups A or B for those in group C.

In addition to the foregoing information, the authors have briefly but effectively touched upon the following subjects from the dietary standpoint: heredity and obesity, postoperative conditions, tuberculosis, nephrosis, nephritis, disturbed gastric function, including ulcer, gallbladder disease, colitis, diarrhea and finally cardiac decompensation, also vascular complications, dermatitis, neuritis and pregnancy.

Brief mention is also made of completely balanced diets from the standpoint of minerals and vitamins.

The diabetic patient is instructed in diabetic hygiene, the dangers of infections of various types and the importance of frequent medical examination.

This book is timely and very much worth while for both the patient and the physician.

**Simmons** and the other authors of **Global Epidemiology**[9] have pioneered in the field of geo-medicine and have under pressure of wartime circumstances and urgent global military necessity compiled a mass of information of enormous value to the armed forces, the full effect and content of which will not be known for years to come. To one who has traveled through most of the countries dealt with in this volume under peacetime conditions, the prodigious amount of work accomplished is staggering. The bibliography alone is well worth the outlay of time and effort involved.

One does not have to be a seer to realize that the work was prepared primarily for the health, protection and medical care of troops, but information of essentially civil value has been recorded for its value to the military authorities in dealing with civilians in occupied territory. Another important part of the work is the tabulation of the medical and hospital facilities, if any, of the countries under discussion.

The reader must take into consideration the great problem of racial differences, the influence of religion, culture and education or lack of it in the countries surveyed, and finally, factional, sectional, and national pride and its influence on some of the reports or surveys. Also for the present much valuable information must be withheld for the sake of military security.

The discussions about the various countries and nations concerned follow a natural, logical and routine plan which makes perusal easy and interesting as well as valuable.

Emphasis is made of the different manifestations of the same infection or disease in different localities of the globe and also of medical problems peculiar to different global localities.

With the postwar world compressed into an area of sixty hours or less by means of modern travel, global medicine and its implications and responsibilities will be as vital and necessary as have been in the past the modern measures of vaccination, immunization and quarantine. A thorough knowledge and complete understanding of global geo-medicine will be a "must" for the national and international health guardians of the future, and this volume will stand out as the initial guide post, with the pointing, inquisitive, scientific finger directing the way to the methods of complete eradication and control of disease and infection which will make universal global travel of the future a happy, educational and healthful experience with a minimum of hazard and a maximum of comfort.

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[9] Global Epidemiology: A Geography of Disease and Sanitation. James Stevens Simmons, Tom F. Whayne, Gaylord West Anderson and Harold Maclachlan Horack. J. B. Lippincott Company, Philadelphia, 1944. Price $7.00.

# *Sección en Español*

## La Equinococosis Primitiva del Conducto Raquideo

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EN el conducto raquídeo pueden desarrollarse dos formas de equinococosis: la primitiva y la secundaria.

Llámase equinococosis primitiva la que resulta de la detención y ulterior desarrollo de un embrión hexacanto en los tejidos blandos encerrados en el conducto raquídeo. La equinococosis secundaria, en cambio, es debida a la invasión de dicho conducto por macrovesículas y microvesículas provenientes de una equinococosis desarrollada primitivamente en una vértebra o, por excepción, en una costilla o en los músculos de los canales vertebrales.

Esta diferenciación en equinococosis primitiva y secundaria tiene aún más interés práctico que teórico. Como hemos de ver más adelante, en la equinococosis primitiva se forma un solo quiste hidático univesicular, quiste que es fácilmente extirpable en el acto quirúrgico, con lo que se obtiene la curación definitiva del enfermo. En la equinococosis secundaria, en cambio, el conducto raquídeo es invadido por gran número de vesículas hijas cuya fuente de origen es la vértebra enferma, lo que impide obtener la curación definitiva; sólo en casos excepcionales se han logrado mejorías muy prolongadas, que han sido interpretadas erróneamente como curaciones.

Contrariamente a lo que sucede en la equinococosis secundaria, de la que ya se conocen unas 250 observaciones, la equinococosis primitiva es extraordinariamente rara; sólo conocemos, incluyendo la que da motivo a este trabajo, 8 observaciones, cuyo resumen va a continuación:

De las observaciones antiguas, recogidas por Devé,[1] sólo pueden aceptarse sin discusión, a nuestro modo de ver, la de Bartels (1869), en que existían dos quistes hidáticos intradurales que comprimían la médula, y la de Goupil, en la cual se encontró un quiste hidático univesicular en el espacio epidural. Rechazamos la observación de Spoo, aceptada por Devé, por cuanto presentaba una excavación en la lámina vertebral correspondiente, lo que para nosotros es signo inequívoco de equinococosis secundaria.

A esas dos observaciones, cuyos originales no se han hallado a nuestro alcance, deben agregarse las siguientes:

OBS. 3.—Castex, Brachetto Brian y Camauer[2] publicaron en 1927 el estudio anátomo-clínico de un sujeto, portador de un quiste hidático univesicular, de 6 a 7 cm. de largo, ubicado entre duramadre y hueso en la región cervical. Tenía, además, quistes multivesiculares en la cisterna magna y en el hígado.

OBS. 4.—Camauer y Sacón,[3] en 1932, dieron a conocer una observación de paraplejía espástica por quiste hidático. Este, que fué

extirpado por el Profesor Solé, asentaba entre duramadre y cuerpos de las décima y undécima vértebras dorsales, "adhiriéndose apenas al periostio vecino." Era también univesicular y medía 5 por 2.5 por 2.5 cm. El estudio histológico, realizado por el Profesor Mosto, ratificó su naturaleza equinococósica.

Obs. 5.—Balado,[4] el mismo año, reprodujo la fotografía de la pieza anatómica y consignó el dato de haber operado a un enfermo con un quiste hidático que comprimía la cola de caballo. También se trataba de un quiste univesicular.

Obs. 6.—Allende y Luque[5] publicaron en 1935 el caso de un otro enfermo operado con éxito afortunado. Era un quiste univesicular, del tamaño de un garbanzo, que se enucleó en cuanto se abrió la duramadre. No hubo escape de líquido céfaloraquídeo, lo que permite sospechar que el quiste estaba rodeado de zonas de aracnoiditis.

Obs. 7.—Rogers y Tudhope,[6] en 1938, estudiaron una chica con dolores, paraparesia y bloqueo del espacio subaracnóideo. La operación, realizada por el Profesor Anderson, permitió extirpar un quiste extradural, univesicular, de 38 por 19 mm., cuya naturaleza equinococósica fué revelada por el estudio microscópico; contenía ganchos pero no escólices.

Obs. 8 (Personal).—A. S. es peón de campo de 22 años. Inicióse su enfermedad hace tres meses, con dolor en la región sacrocoxígea que pocos días más tarde irradió hacia ambos miembros inferiores, predominando en la cara ánteroexterna del muslo izquierdo, en el territorio de las segunda y tercera raíces lumbares. El dolor se exacerbaba enormemente con los movimientos de la tos, del estornudo y de la defecación.

A los ochos días de iniciada la enfermedad, el dolor era tan intenso que se vió obligado a guardar cama. El reposo le proporcionó una evidente mejoría, pero la vuelta al trabajo exacerbó nuevamente el dolor. Internado en un hospital del interior, estuvo en cama durante cincuenta y cinco días y fué sometido a un tratamiento de inyecciones epidurales de lipiodol. Otra vez el reposo en cama calmó casi por completo el cuadro álgico, pero éste reapareció al volver el enfermo a la vida activa.

Actualmente el dolor es muy intenso y calma solamente con la inmovilidad en decúbito dorsal. No ha tenido trastornos esfinterianos ni sensación de torpeza o pérdida de fuerzas en sus miembros inferiores.

El examen somático sólo revela las siguientes alteraciones:

Los músculos de los canales vertebrales, intensamente contracturados, se dibujan como dos gruesos cordones, tanto más visibles cuanto que existe marcada lordosis lumbar. Los movimientos de flexión, extensión e inclinación lateral de la columna lumbar están casi abolidos. El miembro inferior izquierdo se mantiene en ligera flexión de cadera y rodilla. El signo de Lasègue se obtiene bilateral, muy marcado. La flexión forzada de la cabeza exacerba el dolor lumbociático (signo de Neri). La compresión de las venas yugulares provoca adormecimiento doloroso de ambos miembros inferiores (signo de Naffziger y Jones).

La motilidad está normal. No hay amiotrofia ni pérdida de fuerza. Los reflejos tendinosos y cutáneos están normales. La sensibilidad está normal en todas sus formas. En las radiografías no se observan lesiones de vértebras ni de discos intervertebrales.

La punción entre las quarta y quinta vértebras lumbares da líquido céfaloraquídeo xantocrómico, con 30 por ciento de albúmina, que no coagula espontáneamente. Su presión, de 40 cm. de agua, no se modifica con la maniobra de Queckenstedt, pero cae a 12 cm. en cuanto se extraen 6 cc. de líquido.

Sospechando la existencia de un tumor de cola de caballo, se hace una nueva punción entre la duodécima dorsal y la primera lumbar vertebra. La presión, de 25 cm. de agua, sube rápidamente a 40 mediante compresión de las venas yugulares y baja también con rapidez al descomprimir. A este nivel, el líquido céfaloraquídeo tiene 0.44 por ciento de albúmina y 24 células por milímetro cúbico. Se inyectan 5 cc. de lipiodol.

Las radiografías muestran un bloqueo completo, en línea horizontal, a nivel del borde inferior de la primera vértebra lumbar.

Operación se hace en el cuatro de junio, 1940. Raquianestesia con 0.004 Gm. de clorhidrato de percaína (nupercaína; dibucaína) y 0.04 Gm. de clorhidrato de procaína entre la duodécima dorsal y la primera lumbar vertebra permite realizar toda la operación sin el menor dolor. Laminectomía de las primera, segunda y tercera vértebras lumbares que luego, al conocerse la naturaleza del proceso, fué ampliada hasta la cuarta. La duramadre late a nivel de la primera vertebra lumbar, pero no por debajo. Abierta la dura, se advierte que las raíces de la cola de caballo han sido separadas en dos haces laterales por un tumor quístico, alargado en forma de cilindro y con sus extremos redondeados, que se deja desprender con toda facilidad por cuanto sólo tiene adherencias sumamente laxas en sus extremos.

Extraída la vesícula hidática, se observa que las raíces, en la parte que entra en contacto con aquella, están adheridas entre sí por una delgadísima membrana, de aspecto ligeramente inflamatorio, que puede ser interpretada como un esbozo de adventicia. Hacia arriba y hacia abajo estas adherencias velamentosas se cierran en forma de cúpula; gracias a tal disposición la vesícula hidatídica está privada de movilidad. Se sutura la duramadre con "surjet" de hilo de lino y se cierra la herida en 4 planos, sin drenaje.

El curso postoperatorio es ideal, con desaparición inmediata del dolor irradiado. A los veinticinco días no existe el menor dolor local durante los movimientos. De acuerdo a los informes recibidos el cuatro de Abril de 1941, el paciente se ha reintegrado a sus duras tareas de peón de campo, trabajando especialmente a caballo, sin sentir la mínima molestia.

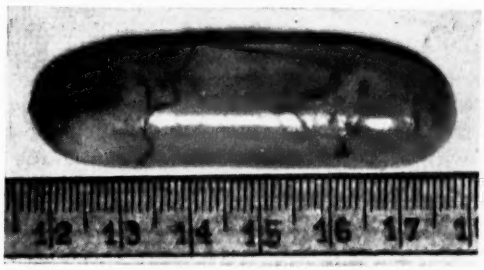
*Examen de la Pieza.*—La vesícula hidatídica mide 6 cm. de largo por 2.5 cm. de diámetro. Es un cilindro perfecto, con sus dos extremos redondeados (fig. 4). Sus paredes son muy delgadas. Contiene líquido incoloro y transparente a discreta tensión. El examen microscópico muestra una capa externa anhista pluriestratificada y una capa interna granulosa con el aspecto típico de la equinococosis; no se observan escólices ni ganchos.

## COMENTARIO Y CONCLUSIÓN

Nuestra observación, sumada a las precedentes, nos permite afirmar que los caracteres de la equinococosis primitiva del conducto raquídeo son los siguientes:

1. La equinococosis primitiva puede asentar en el espacio epidural o dentro del estuche dural.

2. En ambas localizaciones, el aspecto macroscópico del parásito es el mismo.



La vesicula hidática extraida.

Trátase de una vesícula única, alargada en forma de cilindro, con sus extremos redondeados, dispuesta en sentido vertical.

3. Sólo cuando la vesícula es pequeña —no mayor que un garbanzo—tiene forma redondeada.

4. La vesícula hidatídica no se rodea de una verdadera adventicia fibrosa, como sucede cuando parasita otros órganos de la economía. En su localización intradural la aracnoides le forma una delgadísima envoltura velamentosa, que, al cerrarse en cúpula en sus extremos, la mantiene in situ. En su localización extradural son los delgados y laxos tractus fibroso del tejido epidural los que hacen oficio de sostén.

5. La equinococosis primitiva no perfora la duramadre ni corroe o desgasta

el hueso por compresión. Ello se explica fácilmente si se tiene en cuenta su naturaleza univesicular y el tamaño relativamente grande que puede alcanzar, lo que le priva de la fuerza compresiva necesaria para perforar o destruir tejidos más duros que ella.

6. La tensión a que se encuentra sometido el líquido hidatídico en el interior de la vesícula es suficiente para desprender la duramadre y para comprimir a la médula, dando así origen a los síntomas medulares.

7. En cambio, el dolor que provoca el quiste primitivo del conducto raquídeo no parece ser debido a compresión sino a fijación de las raíces por las tenues adherencias que con ellas contrae. En tales condiciones las raíces quedan privadas de sus normales desplazamientos y son por lo tanto sometidas a tirones durante los esfuerzos y los movimientos de la columna. Sólo así se explica que en nuestro enfermo el reposo absoluto suprimiera el dolor casi por completo.

Para afirmar que lo que se ha extirpado es un quiste hidático primitivo del conducto raquídeo, debe hacerse el estudio histológico de la vesícula, ya que otras formaciones quísticas pueden dar lugar a error.

En la enfermedad de Scheuermann, o cifosis dorsal juvenil, se forman a veces quistes extradurales, capaces de comprimir la médula, y cuya forma es también cilíndrica con los extremos redondeados. Clínicamente puede sospecharse su naturaleza por el simple hecho de que el nivel de la compresión medular coincide con la máxima deformación vertebral; radiográficamente por el adelgazamiento de los pedículos vertebrales y el ensanchamiento de los agujeros de conjugación; macroscópicamente porque su forma no es tan regular como la de los quistes hidáticos primitivos y porque tienen un pedículo que los fija a la vaina de una raíz espinal. El examen microscópico muestra que su pared está formada por tejido conjuntivo poco vascularizado.

Dentro del estuche dural pueden desarrollarse neurinomas quísticos y quistes del filum terminal. Los primeros se reconocen porque tienen uno de sus extremos constituído por tejido sólido y porque la raíz que les ha dado origen, a la que están firmemente adheridos, se abre a su alrededor en forma de abanico. En los segundos sucede análoga cosa con el filum terminal. En ambos casos el aspecto histológico es característico.

La última posibilidad de error es ofrecida por el quiste congénito desarrollado en el espesor de la duramadre posterior. Sólo conocemos hasta el momento actual una observación de Voss,[7] quien lo interpretó como una variedad especial de meningocele. Histológicamente el quiste estaba formado por una capa externa de tejido conjuntivo y otra capa interna, endotelial.

## BIBLIOGRAFÍA

1. Deve, F.: Trente-deux années d'étude de l'échinococose, Buenos Aires, Argentina, G. Buffarini, 1933.
2. Castex, M. R.; Brachetto Brian, D., y Camauer, A. F.: Sindrome de compresión medular por quiste hidático del espacio epidural en la región cervical, Prensa méd. argent. *14*:281–293, 1927.
3. Camauer, A. F., y Sacón, J. I.: Paraplejía espástica trepidante por quiste hidático epidural a nivel de la decima vertebra dorsal, Hospital, Argentina *2*:991–1000, 1932.
4. Balado, M.: Lecciónes de cirugía neurologica, Buenos Aires, Argentina, E. Spinelli, 1932.
5. Allende, M. J., y Luque, O.: Síndrome de compresión medular por quiste hidático intradural, Bol. y trab. Soc. cir. de Buenos Aires *19*:283–295, 1935.
6. Rogers, J. S. I., y Tudhope, G. R.: Hydatic Cyst of the Spinal Canal Successfully Treated by Operation, Arch. Dis. Childh. *13*:269–274, 1938.
7. Voss, O.: Rückenmarkskompression durch eine intradurale Cyste, Deutsche Ztschr. f. Chir. *248*:341–345, 1936.

## SUMMARY

A man of 22 was suddenly attacked with pains in the sacrococcygeal region which extended to the lower limbs, especially the front of the left thigh.

Rest in bed alone gave relief.

Roentgenograms of the spinal column (made after injection of iodized poppy-seed oil) showed a complete horizontal

obstruction under the lower edge of the first lumbar vertebra.

Laminectomy of the first four lumbar vertebrae was done. When the duramater was opened, an echinococcic cyst on the end of the medulla was extirpated. The operation gave immediate and permanent relief.

The location of the cyst in this case is unusual.

RÉSUMÉ

Un homme de 22 ans est attaqué soudainement de douleurs dans la région sacrococcygienne. La douleur s'étend aux membres inférieurs, intéressant surtout la cuisse gauche.

Seul le repos au lit donnait quelque soulagement.

Les roentgenogrammes de la colonne vertébrale (fait après injection d'huile iodurée de graines de pavots) montrèrent une obstruction horizontale complète au dessous du bord inférieur de la première vertèbre lombaire.

On fit une laminectomie des quatre premières vertèbres lombaires; on ouvrit la duremère, et on extirpa un kyste échinococcique. Le soulagement obtenu fut immédiat et permanent.

Le siège du kyste dans le cas rapporté est rare.

СВОД

Мужчина 22 лет был неожиданно поражен сильными болями в крестцо-копчиковой области, распространяющимися в нижние члены тела, особенно в переднюю часть левого бедра. Только лежание в постели дало облегчение.

Рэнтгенограмы спинного канала (сделанные после ин'екции иодизированного макового масла) показали полную горизонтальную обструкцию на уровне нижнего края первого поясничного позвонка.

Была сделана ламинэктомия первых четырех поясничных позвонков. Когда dura meter была вскрыта, была удалена эхинококковая киста спинного мозга. Операция дала немедленное и полное облегчение.

Локализация кисты в этом случае очень необыкновенна.

## NOTICIAS Y ANUNCIAS

### MÉXICO

Han ingresado recientemente al Colegio Internacional de Cirujanos, Capítulo Mexicano, los distinguidos colegas siguientes: Dr. Fernando Quiroz, F.I.C.S., antiguo y meritísimo profesor de la Facultad de Medicina de la Universidad Nacional de México; Dr. Alfonso Díaz Infante, F.I.C.S., Director del Hospital de la Cruz Roja Mexicana y Consejero del Seguro Social de México; Dr. Librado Gutiérrez, F.I.C.S., Académico Correspondiente de la Academia Mexicana de Cirugía en Pachuca, Hidalgo; Dr. Fernando López Rodríguez; F.I.C.S., prestigioso oculista de Mérida, Yucatán; Dr. Ricardo Labardini Nava, miembro de la Academia Mexicana de Cirugía. El Capítulo Mexicano aprobó asimismo promociones a Fellows, a saber: Dr. Enrique Flores Espinosa, Cirujano de los Hospitales General e Italiano; Dr. Héctor Ramírez de Arellano, Director del Hospital de la Cruz Roja en Pachuca, Hidalgo.

Nuestros distinguidos colegas mexicanos Dr. Raúl Arturo Chavira, F.I.C.S., y Dr. Octavio Rojas Avendaño, F.I.C.S., fueron elegidos Electores por parte de la Facultad de Medicina, Universidad Nacional de México, para participar en las recientes elecciones académicas de la propia Universidad.

*(Continuido en pagina 307)*

# La Raquianestesia

## Tecnica de W. Howard Jones

ALEJANDRO J. PAVLOVSKY, M.D.,* y EDUARDO AUDISIO, M.D.
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La elección del anestésico en cirugía plantea a diario cual será para el paciente el más inofensivo y seguro.

Nosotros tenemos hecho nuestro lugar, prefiriendo siempre la anestesia local o general, recurriendo solamente a la raquianestesia en casos especiales.

Se ha mencionado el empleo de las soluciónes hipotónicas de percaína, propuestas por el profesor W. Howard Jones, de Londres, técnica que venimos usando en nuestro servicio.

Estas soluciónes hipotónicas de clorhidrato de percaína, al 1 por 1,500, tienen un peso específico de 1.0034, densidad menor que la del líquido céfalorraquídeo, que es de 1.005 a 1.007, por lo cual la solución anestésica tiene tendencia a tomar los espacios superiores del líquido céfalorraquídeo, de donde se deduce que la inyección debe darse siempre en decúbito lateral, y que el Trendelenburg será rigurosamente la posición definitiva para evitar el ascenso del anestésico al bulbo.

Además, el Professor Jones demostró que la constitución de la subaracnoides no es un simple saco, sino un tejido de mallas muy laxas que se deja infiltrar con líquido poco concentrado, como se hace para anestesia local.

Con estas dos nuevas adquisiciones y teniendo en cuenta la publicación hecha por el Profesor Sebrechts en la *Revue belge des sciences Médicales,* del año 1934, donde concluye diciendo "que éste es el mejor procedimiento de raquianestesia," empezamos a usar su técnica y pudimos comprobar que las ventajas obtenidas son valiosas, entre las cuales mencionaremos: (1) anestesia de dos horas y media a tres horas; (2) poca toxicidad; (3) localización a las raíces inferiores por la posición de Trendelenburg; (4) limitación de la altura; (5) resolución muscular completa, y (6) curso postoperatorio normal.

El empleo de las soluciones hipotónicas ha marcado un nuevo rumbo, una diferente técnica, con una serie de detalles que deben seguirse exactamente, aunque parezcan insignificantes, pues el olvido de algunos de ellos traerían incidentes y sus resultados serían inseguros y variables.

Comúnmente se dice que la raquianestesia puede ser aplicada por un ayundante cualquiera, con sólo la capacidad de hacer bien una punción lumbar. Esto es una grave conducta, pues la raquianestesia es una intervención tan seria y tan llena de responsabilidades como la operación misma. Debe ser practicada por un médico entrenado y bien ejercitado en sus mínimos detalles, para ser así una anestesia eficaz y segura.

Elegimos siempre a los enfermos que

* Profesor Adjunto de Clínica Quirúrgica, Hospital Fiorito.

van a recibir esta anestesia. La efectuamos en intervenciones grandes y laboriosas, donde su efecto dura dos a tres horas. En los últimos 2,000 de nuestros pacientes operados, 300 han recibido como anestésico esta solución hipotónica, no practicándola en lo que en cirugía podíamos llamar pequeñas intervenciones (apendicectomía, extirpación de hemorroides y de quistes coxígeas, herniostomías).

Recordaremos al respecto de esta lo que dijo el Prof. While, de Norte América, de regreso de su viaje de la ciudad de Viena: "El distinguido cirujano, en cuya división yo estudiaba este punto con vivo interés, desanimó mi entusiasmo, me susurró en una velada: *"No use esta anestesia con todos los pacientes, cuando regrese. Sea prudente."*

Con algunas variantes a la técnica de Howard Jones, describiremos la técnica que usamos en nuestro servicio.

TÉCNICA

*Dosis.*—La solución de clorhidrato de percaína al 1 por 1,500 viene en ampollas de 20 cc. que prepara un comercio, teniendo cada ampolla 0.0133 Gm. de percaína y cada 1 cc. de solución 0.00067 Gm.

Para las intervenciones de menor importancia del abdomen inferior y miembros (eventraciones, amputaciones), usamos 10 cc. de solución (es decir, 0.0067 Gm. de percaína).

Para las intervenciones en la cavidad abdominal inferior y pelvis (histerectomías, amputación de recto y asa sigmoidea), empleamos 12 cc. de solución (0.0073 Gm.).

Para las intervenciones en el abdomen superior (colecistectomías, nefrectomías) usamos 15 a 18 cc. de solución (0.009 Gm.); nunca hemos pasado de 15 cc. de solución.

*Sitio de la Punción.*—Para las intervenciones situadas por debajo de una línea horizontal que pasa a nivel del ombligo, hacemos la punción entre la quarta y la quinta o entre la tercera y la quarta apófisis lumbar.

Para las operaciones situadas por encima de esa línea, hacemos la punción entre la primera y la segunda vertebra lumbar o entre la duodécima dorsal y la primera lumbar.

Teniendo la precaución de graduar en más o en menos la posición Trendelenburg, según las raíces que queremos anestesiar, variamos esta inclinación desde un ángulo de 10 a 20 grados.

*Instrumentarium.*—Una ampolla de 20 cc. de solución de clorhidrato de percaína es entibiada a bañomaría, pues a esta temperatura se evitan las cefaleas.

Empleamos una jeringa de 20 cc. con una aguja de inyecciones intramusculares para cargar el anestésico, una aguja de punción raquídea fina, de 0.8 mm. de diámetro por 8 a 10 cm. de largo, de bisel corto, tipo Pauchet o tipo Gutiérrez.

Este material debe ser esterilizado con agua bidestilada libre de todo álcali o bien en seco en la estufa.

Como complemento, se debe tener a mano ampollas de efetonina, efedrina, cafeína, estricnina, oxígeno y carbógeno, para hacer inhalar durante la intervención y en casos de tendencia nauseosa y sincopal.

*Cuidados Preoperatorios.*—Cosa muy importante, que no debe olvidarse, es el estado psíquico del paciente; el médico ha de familiarizarse con él, recomendándole que es el anestésico mejor para su organismo, dominarle, calmarle de su excitación, despertándole confianza, podríamos decir: hechizarle, encantarle.

Una hora antes de hacer la punción raquídea, le inyectamos 1 cc. de solución de pantopón (una mistura de clorhi-

dratos de alcaloides del opio) o eucodal (clorhidrato de dihidro-oxicodeinone). Media hora después de ese narcótico le inyectamos 1 ampolla de efedrina o efetonina (0.05 Gm.). Si la presión maxima de la sangre fuera de 160 mm. o más, no le damos esos analépticos.

El enfermo es llevado a la mesa de operaciones y colocado siempre en posición decúbito lateral; nosotros hemos elegido el decúbito lateral derecho para mayor comodidad.

Cargamos mientras tanto la jeringa con la dosis de la solución de percaína determinada.

Marcamos las apófisis espinosas y las crestas ilíacas y desinfectamos la región con tintura de iodo, quitando el exceso con alcohol.

Punción del espacio interespinoso elegido, con la aguja de raquídea sin mandril, avanzamos suavemente hasta el subaracnoides; llegado a éste, sale el líquido céfalorraquídeo con cierto retardo, por la delgadez de la aguja; al salir las primeras gotas y para estar seguro de inyectar en buen lugar, se introduce 1 mm. a 2 mm. más la aguja y sin dejar que salgan más de 2 a 3 gotas de líquido céfalorraquídeo pues es otra condición importante procurar no perder el líquido; se conecta rápidamente la jeringa cargada con la solución y se inyecta lentamente a razón de 2 cc. por minuto. Al inyectar el primero o el segundo centímetro cúbico de la solución, se nota una resistencia; se debe esperar medio minuto y luego se prosigue inyectando la dosis completa, sin aspirar y reinyectar, es decir, no hacer nunca barbotage.

Terminada de inyectar toda la solución, se deja medio minuto la jeringa presionando sobre el émbolo para que no salga líquido céfalorraquídeo por el trayecto de la aguja; mientras tanto le hacemos inyectar 1 cc. de una solución de cafeína subcutánea, la cual excita el sistema cardiovascular, eleva la presión y evita los vómitos.

Se coloca ahora al enfermo en decúbito ventral para que el anestésico actúe sobre las raíces posteriores y en ligera posición de Trendelenburg si se interviene en la pelvis o abdomen inferior, no siendo necesaria esta posición si se interviene en el abdomen superior. Se deja en esta posición durante diez minutos.

Cuando el vientre es muy voluminoso (e.j., gran panículo adiposo, gran tumor de abdomen), es imposible colocarlo en decúbito ventral; en estos casos se coloca el paciente en decúbito ventral lateralizado, primero a la derecha, durante diez minutos, y luego lateralizado a la izquierda, durante cinco minutos.

Llegados los diez minutos en la posición decúbito ventral, se pasa luego a la posición decúbito dorsal, para la cual se pone la mesa en la posición de Trendelenburg con una inclinación de 10 grados, cuando se interviene en bajo vientre. Al pasar de la posición decúbito ventral al dorsal, se le encarga al enfermo que no levante la cabeza; al mismo tiempo un ayudante le da vuelta, procurando levantar la pelvis a un nivel más alto; estas maniobras deben hacerse con dos ayundantes, con suma delicadeza, sin sacudirle y sin brusquedad.

Esta posición es la definitiva, la cual no debe abandonarse, pues con la posición de Trendelenburg más o menos acentuada, se limita la altura de la anestesia y se evita que el anestésico ascienda al bulbo con los peligros consiguientes.

A los treinta minutos de terminada la inyección raquídea, se puede empezar a operar.

*Cuidados Durante la Intervención.*— Hay que vigilar la hipotensión, buscando

sus síntomas clínicos, por palpación del pulso radial, pues es suficiente y fácil percibirla cuando baja bruscamente, única forma que nos alarmaría y obligaría a recurrir a las drogas analépticas (efetonina, efedrina o inyección de suero adrenalinado), en cuyo único momento su acción hipertensiva parece ser más eficaz.

Durante la intervención y cada quince a veinte minutos, le hacemos inhalar carbógeno, de tres a cinco minutos, para combatir la anoxemia causante de la fatiga del centro respiratorio producida por la absorción de la droga por la corriente sanguínea.

Siempre le inyectamos una ampolla de coramina (niketamida; 25 por ciento solución de piridine–3–[$\beta$]–carboxilic acido dietilamide) subcutánea a los cuarenta minutos de la intervención, para estimular la respiración y favorecer la actividad y regulación cardíaca.

*Cuidados Postoperatorios.*—El transporte del enfermo de la mesa de operaciones a su lecho debe hacerse en la posición de Trendelenburg, y el enfermo debe mantenerse en esa posición por lo menos catorce horas, para evitar el ascenso del anestésico y las cefaleas.

Estando ya en su cama, se le da una ampolla de coramina, y 0.5 mg. de estricnina subcutánea, para levantar la depresión del tonus muscular. Se le hace inhalar carbógeno, diez minutos por hora, durante cuatro o cinco horas. Además se le darán las inyecciones de suero e indicaciones especiales corrientes.

El progreso del empleo de las soluciones hipotónicas es tan manifiesto que los cirujanos Etherington-Wilson, Boume y O'Schanghuessy las emplean en toracoplastias altas y bajas, efectuando la raquianestesia con el enfermo en posición sentada, graduando así, según el tiempo de posición en segundos, el ascenso del anestésico, con resultados excelentes y sin ningún accidente ni secuela.

### CONTRAINDICACIONES

1. Afecciones encéfalomedulares.
2. Afecciones supuradas dorsales, de difícil asepsia.
3. Shock traumático o heridas grandes con hemorragias intensas donde haya hipotensión.
4. Septicemias.
5. Los específicos.
6. Enfermos que padecen de cefaleas.

### RESULTADOS

La anestesia ha sido completa y se ha mantenido durante dos a tres horas en intervenciones grandes y complejas, sin manifestar los pacientes ningún accidente ni síntomas de intolerancia.

El tan temido descenso brusco de la presión sanguínea no lo hemos observado nunca, tal vez sea debido a la condición primordial de esta técnica, de mantener al enfermo siempre en la posición de Trendelenburg, posición que según algunos autores es la más eficaz y el único medio para combatir la anemia aguda cerebral, responsable del colapso vasomotriz, y al empleo, durante la intervención, del carbógeno, que actúa estimulando el aparato cardiopulmonar. Generalmente no vomitan, y en casos muy especiales enfermos pusilánimes y excitados presentan algunas náuseas, escasos vómitos a los veinte o treinta minutos de inyectado el anestésico.

Esto lo observamos en las primeras anestesias, donde usábamos como narcótico la morfina; pero desde que la reemplazamos por el pantopón (una mistura de clorhidratos de alcaloides del opio) o eucodal (clorhidrato de dihidro-oxicodeinone) éstos han desaparecido.

La resolución muscular, el silencio abdominal es satisfactorio, permitiendo

al cirujano trabajar con suma comodidad.

Los cursos postoperatorios han sido tranquilos. Los ritmos respiratorio y circulatorio han sido normales; la parálisis del nervo moto ocular común no la conocemos; las cefaleas que tanto mortifican al paciente y no menos preocupan al cirujano han sido desterradas con esta técnica.

Procediendo con esta técnica, cuidando todos sus detalles así como tratando con suma delicadeza a los enfermos hemos conseguido una anestesia excelente y segura, pudiendo decir con el Profesor Forgue "que el principio de la solución hipotónica debe señalarse como un progreso definitivo."

BIBLIOGRAFÍA

Gurd, F. B., Vineber, A. M., y Bourne, W.: Our Experiences in Employment of Spinal Anesthesia for Thoracoplasty, J. Thoracic Surg. 7:506 (Junio), 1938.
Jones, W. Howard: Nouvelle methode d'anesthésie rachidienne par la percaine, Lyon chir. 27:579 (Sept.–Oct.), 1930.
Sebrechts, J.: La rachianesthésie, Rev. belge d. sc. méd. 6:312 (April), 1934.
Thorek, Max: Spinal Anesthesia, in Surgical Errors and Safeguards, Philadelphia, J. B. Lippincott Company, 1937.

SUMMARY

We use spinal anesthesia only for important operations, and almost exclusively for operations on the lower part of the abdomen.

It has been used for major gynecologic operations, for operations for cancer of the rectum, for hysterectomies, for operations for cancer in obese persons, for colectomies, for nephrectomies, and for other operations in 300 cases.

It has usually been employed when general anesthesia might be dangerous: for instance, in the presence of pulmonary sclerosis in a case of cured tuberculosis; for total or vaginal hysterectomy in cases of cancer; in the presence of obesity, and for hypertensive elderly patients (30 patients more than 60 years old).

Because of the seriousness of the operations, our experience is important in view of its good results. The 1 to 1,500 hypotonic solution of percaine hydrochloride (β–diethylaminoethylamide of 2–butoxycinchoninic acid hydrochloride) employed by the technic of Howard Jones produces an excellent prolonged anesthesia, with little risk, and without danger of bulbar infiltration when a forced "Trendelenburg" position is maintained, which is observed frequently when hypertonic solutions of Quarella are used.

RÉSUMÉ

Nous n'employons l'anesthésie spinale que pour les opérations importantes et presque exclusivement pour les opérations sur la partie inférieure de l'abdomen.

Cette anesthésie a été employée pour les grandes opérations gynécologiques, pour les opérations pour cancer du rectum, pour l'hystérectomie, pour la néphrectomie et pour d'autres opérations dans 300 cas.

L'anesthésie spinale est ordinairement employée quand l'anesthésie générale parait hasardeuse, par example, dans les cas de sclérose pulmonaire résultant d'une tuberculose guérie; pour l'hystérectomie totale ou vaginale pour cancer du corps de l'utérus; chez les malades obèses; chez les malades d'âge avancé et souffrant d'hypertension artérielle.

Une solution hypotonique (1 à 1,500 solution) d'hyperchlorure de percaine employée d'après la technique de Howard Jones nous donne une excellente anesthésie prolongée, avec peu de risques et sans danger d'infiltration bulbaire quand le malade est maintenue dans la position de Trendelenburg. Cette infiltration s'observe fréquemment quand on emploie une solution hypertonique de Quarella.

## СВОД

Мы употребляем спинную анэстезию только в важных операциях и почти исключительно для операции нижнего живота.

Этот способ был употреблен при больших гинекологических операциях, при операциях прямой кишки, метеректомиях, операциях над тучными больными, при колостомиях, нефректомиях и при разных других операциях в 300 случаев.

Обыкновенно, он применяется, когда общая анэстезия опасна, как например, в присутствии легочного склероза в случаях залеченного туберкулеза; в тотальной или вагинальной истерэктомии; в присутствии тучности; для пожилых больных с повышенным кровяным давлением (было 30 больных старше 60 лет).

В виду серьезного характера этих операций наш опыт важен по своим хорошим результатам.

1:1500 гипотонический раствор соляно кислого перкаина (β — диэтиламиноэтиламид 2 = бютоксинхониной гидрохлорной кислоты) применяемый по методике Howard Jones дает великолепную продолжительную анэстезию с очень небольшим риском и без опасности бульбарной инфильтрации в положении Irendelenburg'a, что часто наблюдается, когда употребляется гипертонический раствор Quarella.

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## NOTICIAS Y ANUNCIAS

*(Continuado de página 301)*

Recientemente fueron elegidos miembros del Consejo Técnico de la Facultad de Medicina, Universidad Nacional de México, los distinguidos colegas siguientes: Prof. Dr. Manuel A. Manzanilla, F.I.C.S. (Hon.), Vicepresidente Internacional del Colegio Internacional de Cirujanos; Prof. Dr. Miguel López Esnaurrízar, F.I.C.S. (Hon.), Regente Nacional y Tesorero del Capítulo Mexicano; Prof. Dr. Francisco Fonseco, F.I.C.S. (Hon.), Regente Especialista y Secretario Nacional; Prof. Dr. Julián González Méndez, F.I.C.S., Regente Especialista de Cirugía Toráxica; Dr. Fernando Quiroz, F.I.C.S., antiguo y meritísimo Catedrático de Anatomía de la Facultad.

Nuestros distinguidos colegas cubanos Dr. Ricardo Núñez Portuondo, F.I.C.S. (Hon.), y Dr. José Lastra Camps, F.I.C.S., fueron elegidos recientemente Académicos Correspondientes de la Academia Mexicana de Cirugía. Asimismo, fué elegido Académico Correspondiente por la propia Academia el distinguido colega cubano Dr. Nicolás Puente Duany, Director del Instituto del Radium de la Habana.

Nuestro distinguido colega Dr. Chevalier L. Jackson, F.I.C.S., ex-vicepresidente del Colegio Internacional de Cirujanos, fué elegido Académico Correspondiente por la Academia Mexicana de Cirugía.

El distinguido colega mexicano Dr. Ignacio Cadena H., M.I.C.S., fué elegido Académico Correspondiente de la Academia Mexicana de Cirugía.

El distinguido colega mexicano Dr. Darío Fernández Fierro, F.I.C.S. (Hon.), Vicepresidente Nacional del Capítulo Mexicano del Colegio Internacional de Cirujanos, ha sido invitado por el señor Presidente de la República de Costa Rica para visitar dicho país en misión de acercamiento científico e intercambio universitario. Asimismo, el Dr. Fernández Fierro ha recibido invitación de la sociedad universitaria "La Juventud Médica de Guatemala" para visitar también dicho país.

*(Continuado en la página próxima no. XVII)*

*(Continuado de página 307)*

Se ha publicado en México recientemente un importante "Tratado de Anatomía Humana," del que es autor el distinguido colega mexicano Dr. Fernando Quiroz, F.I.C.S., antiguo y meritísimo profesor de la materia en la Facultad de Medecina de la Universidad Nacional de México. Dicha obra fué editada bajo los auspicios de la propia universidad.

El distinguido colega mexicano Dr. Ignacio Gonzales Guzmán fué elegido recientemente Director de la Facultad de Medicina, Universidad Nacional de Mexico. Asimismo, en ocasión del Segundo Congreso Nacional de Cancerología de Cuba, fué designado en forma distinguida Miembro de Honor del propio Congreso y Miembro Correspondiente de la Sociedad Cubana de Cancerología.

El distinguido colega Dr. Conrado Zuckermann, F.I.C.S., fué designado recientemente profesor de Clínica de Cancerología de la Facultad de Medicina de la Universidad Nacional de México.

Está muy interesante que el Hospital San Juan de Dios, de San José de Costa Rica, ha organizado un Congreso Médico, con el propósito de conmemorar el Centenario de su Fundación. Han sido invitados para esta importante reunión científica diversos y distinguidos miembros del Colegio Internacional de Cirujanos.

Se puede anunciar que se ha constituído el Comité Mexicano para la V Asamblea Internacional del Colegio, en la forma siguiente: Presidente, Dr. Manuel A. Manzanilla, F.I.C.S. (Hon.); Vicepresidentes, Dr. Miguel López Esnaurrízar, F.I.C.S. (Hon.) y Dr. Francisco Fonseca, F.I.C.S. (Hon.); Secretario, Dr. Enrique Flores Espinosa, F.I.C.S.


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